

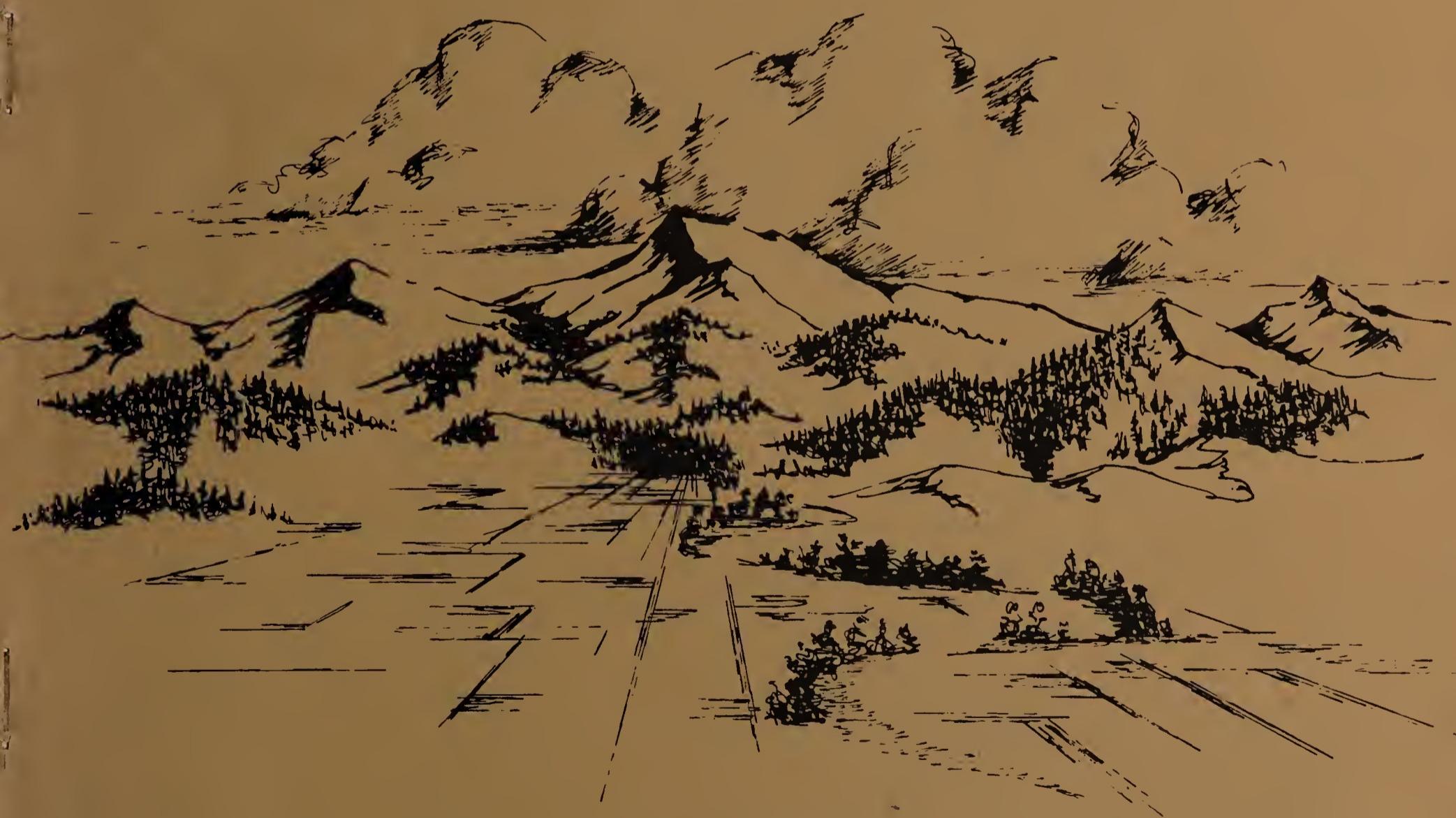
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1972 ARCHAEOLOGICAL SURVEY IN THE DECKER/BIRNEY AREA OF BIG HORN COUNTY, SOUTHEASTERN MONTANA

by Thomas Haberman



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1972 ARCHAEOLOGICAL SURVEY IN THE DECKER/BIRNEY AREA
OF BIG HORN COUNTY, SOUTHEASTERN MONTANA

Thomas W. Haberman

October 1973

a Western Interstate Commission for
Higher Education (WICHE) Project
sponsored by the Montana State Office
of the Bureau of Land Management

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The research project here reported was organized by the Western Interstate Commission for Higher Education (WICHE) through the Montana State Office of the Bureau of Land Management. Both of these organizations receive my thanks for making this summer project possible.

Several individuals associated with the Bureau of Land Management were most helpful: Carl Lind served as the primary project director. His efforts towards helping organize and carry out this summer work are especially appreciated. Dick Cosgriff took time from his busy schedule to instruct me in the use of aerial photographs. Demiles Pedersen and Ronald Bartley had previously conducted an interview survey in the area which gave me numerous leads to the local archaeology. Some, but not all, of these site leads were checked during my summer work in the southwestern portion of the "Birney/Decker Planning Unit". Their work also served as an especially important guide to contact with local land owners. The Bureau of Land Management furnished much of the equipment needed to establish a field camp.

Several people from the Department of Anthropology at the University of Montana, Missoula, aided in the completion of this project. Floyd W. Sharrock, professor of anthropology, called my attention to the availability of this project and reviewed portions of my rough drafts. Dee C. Taylor, professor of anthropology, also reviewed portions of a rough draft of this report. Unfortunately, time has not permitted the incorporation of all of their instructive comments. I take the responsibility for the material as presented in this report. Susan R. Sharrock provided a variety of helpful hints on editorship. However, I must assume responsibility for typographical, grammatical, and errors of format which will surely be found in this report. Tony Ramos, laboratory assistant, and Sharron Griffin, departmental secretary, tolerated my incessant pestering for supplies -- in the form of unpublished manuscripts and a typewriter -- which were needed for the completion of this report. Lynn Fredlund appraised me of the petroglyph recording technique that I used and she took the photographs of the plastic overlays which I used in the preparation of the petroglyph illustrations included in this report.

This project would not have been possible without the co-operation of many local land owners. All of the people who I had occasion to contact were agreeable in allowing me access to their property, and some were genuinely interested

in my project. In this later regard, I wish to especially thank "Slim" and George Kobold, Rico Carbone, Jess Thomas, and Claris Foss for taking time to show me important archaeological sites or collections of artifacts from the area. The Decker Coal Company permitted me access to some of their lands.

When I was in Billings, Lawrence L. Loendorf provided me very economical living quarters which helped cut down on my summer expenses. Through the expertise of Jane Loendorf I enjoyed many delightful, convenient, and inexpensive meals. Several members of Loendorf's 1972 summer crew, especially Mel Barnett and Tom Larson, provided camp company during the first several weeks of the summer as we jointly investigated the archaeology of the area.

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INTRODUCTION

During the summer of 1972 I had the opportunity to conduct an archaeological survey in the vicinity of Decker, Montana in the southeastern part of the state. Decker is located in Big Horn County, Montana, near the Tongue River, and just a few miles north of Sheridan, Wyoming. The project was sponsored by the Montana State Office of the Bureau of Land Management through the Western Interstate Commission for Higher Education (WICHE). The Bureau of Land Management has designated the "Birney/Decker" area as a planning unit. Containing both public and private lands, the area is under lease considerations for the mining of coal. Included in this Bureau of Land Management resource development project are investigations of various aspects of range value, ecology, and recreational potential as well as the archaeological and historical significance of the area.

This report is intended both to assist the Bureau of Land Management in their design of leases, and to add to the growing body of data concerning the prehistory of Montana.

After spending several days in Billings, Montana familiarizing myself with the survey area through conversations with Bureau of Land Management personnel and the study of aerial photographs, a field camp was established in a public camping area beside the Tongue River Reservoir on June 27. Field work lasted from that date until September 4, 1972. Laboratory analyses of the collected material and preparation of this report followed the field season -- often in competition with other pressing obligations.

The archaeological survey involved walking the terrain, searching for surface indications of prehistoric activity. In the case of private lands, land owners and tenants were first contacted for permission to investigate their property. Many people were especially co-operative and provided information on archaeological sites. These site leads were checked during the course of the survey. Whenever an archaeological site (the location of some prehistoric activity) was found, it was recorded on University of Montana Statewide Archaeological Survey site forms. A representative sample of stone flakes and all finished stone tools were collected from the surface of these sites. The site forms serve as the source of data for the site descriptions as presented later in this report. The original site forms are on file in the Department of Anthropology Statewide Archaeological Survey Archives at the University of Montana, Missoula. Carbon copies of all forms are in the possession of the

Billings State Office of the Bureau of Land Management. The archaeological materials collected from the surface of these sites are now at the University of Montana where they are being further studied.

Following this field methodology, I located and recorded 44 archaeological sites in the vicinity of Decker during the summer of 1972. Twenty-seven of these are described in this report; the remainder having been previously reported by Loendorf, Barnett, and Larson (1972) (See PREVIOUS WORK IN THE DECKER/BIRNEY AREA section of this report). Counting the sites described by Loendorf, Barnett, and Larson (1972) and those reported in this report, the overall field work during the 1972 season resulted in the recording of almost 70 archaeological sites in the southwestern portion of the Birney/Decker planning unit. By legal description, the area which I consider to have been adequately covered in the 1972 archaeological survey includes the following:
Range 39 East, Township 8 South, Sections 20, 21, 22, 23, the SW 1/2 of 24, 25, 26, 27, 28, 29, 32, 33, 34, and 35;
Range 39 East, Township 9 South, Sections 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 14, 15, 17, 22, the N 1/2 of 23, and 24; Range 40 East, Township 8 South, Sections 29, 30, 32, and 33; Range 40 East, Township 8 South, Sections 18, 19, 20, and 10. In the lower portion of the Pond Creek basin, Fredlund (1972) has reported his survey of portions of the following: Township 9 South, Range 40 East, Sections 8, 9, 10, 15, 16, 17, and 21. (See also PREVIOUS WORK IN THE DECKER/BIRNEY AREA section of this report.) Most of this area is included in the Pearl School and Decker United States Geological Survey Quadrangle Maps for Big Horn County, Montana.

The surveyed area includes most of the Dry and Squirrel Creek drainages, the upper portions of Pond and Pearson Creeks, most of the South Fork of Spring Creek, and a small portion of the Spring Creek drainage. A few areas within this broad outline could use more survey work in conjunction with future archaeological investigations. Notable in this regard are the valley floor along the south side of Squirrel Creek, and the ridge top separating the South Fork of Spring Creek from Spring Creek.

Occasional less intensive field work, consisting of early field season spot checking and following out site leads, resulted in the recording of some sites outside the defined area. These include a few sites located east of the Tongue River and others north of the surveyed area. These should not be taken to indicate comprehensive survey in these areas.

Following this introduction, this report includes sections dealing with cultural chronology, a review of previous archaeological work done in the Decker/Birney area, a presentation of the data gathered during the survey, and concluding and interpretive remarks. The geology, climatology, and flora and fauna are not reported here because the Bureau of Land Management has had other investigations concerned with these aspects of the area as a part of its resource development program. Loendorf, Barnett, and Larson (1972) have provided some information of this nature in their report to the Bureau of Land Management.

CULTURAL CHRONOLOGY IN THE DECKER/BIRNEY AREA

Introduction. The data in this report are arranged according to the cultural chronology established by William Mulloy in his A Preliminary Historical Outline for the Northwestern Plains (1958). This important publication, dealing primarily with the materials excavated from Pictograph Cave near Billings, has long served as the basis for a general Northwestern Plains chronology. In the following paragraphs, each of the cultural periods established by Mulloy is characterized in terms of general time span and diagnostic projectile point styles and the cultural material from the Decker/Birney area is correlated with the chronological sequence. Other aspects of these cultural stages will be reviewed in the concluding section of this report.

A long prehistory of human occupation in the Decker/Birney area is indicated; culminating in particularly important historical events of the late 19th century.

Early Prehistoric Period. The Early Prehistoric Period encompasses the earliest well-documented archaeological materials known in the New World. Clovis, Folsom and Plano "cultures" fall within this time period. While dates are not firmly established, it appears that this period begins some 10 or 11,000 B.C. and terminates at approximately 4,000 B.C.

To my knowledge neither Clovis nor Folsom material has been recovered from the Decker/Birney area. However, they have been found in Montana east of the Rocky Mountains and could well be present in this area. Plano includes a

variety of generally lanceolate projectile point types one of which, Eden Valley, was recovered by Fredlund in the Pond Creek area during his 1971 survey (Fredlund 1972). Additional artifacts of this age from the Tongue River drainage are indicated by illustrations in a publication by Carbone (Carbone 1972). None of the material that I found in the course of field survey, or that I saw in local collections is typologically datable to this early culture period.

Early Middle Prehistoric Period. The Early Middle Prehistoric Period spans the period from the close of the Early Prehistoric, 4,000 B.C., through A.D. 1. Characteristic projectile points include: "Lanceolate points with concave bases." [McKean type] and "Points with large lateral notches or basalar constrictions and concave or convex bases." [Hanna and Duncan types] (Mulloy 1958:16).

Sites in the Decker/Birney area dating to this period include Level II of the Kobold Site (Frison 1970) and the Powers-Yonkee Bison Trap (Bentzen 1966). Linda Thomas, a local resident and member of the Sheridan Chapter of the Wyoming Archaeological Society, showed me a projectile point that I identified as McKean which had been collected from a site overlooking the Tongue River in the vicinity of the Decker Coal Company mine. I located and recorded one site (Few Pines Site) which may date to this period but material on the surface of the site was scanty and the one projectile point found at the site is not clearly diagnostic.

Late Middle Prehistoric Period. The Late Middle Prehistoric Period extends from A.D. 1 through A.D. 500. It is characterized by a variety of corner notched projectile point styles. Most of the sites that were recorded, and materials that were collected during this survey fall within this culture period.

Late Prehistoric Period. The Late Prehistoric Period extends from the close of the Late Middle Prehistoric, at A.D. 500, until A.D. 1800. Diagnostic projectile points include "Small, triangular points without notches. . . ., Small, side notched points with flat or concave base. . . ., [and] Small, side notched points with base notches (Mulloy 1958:163)." . . .

Late Prehistoric Period manifestations in the Decker area include several occupation sites recorded during the 1972 archaeological survey. Excavations at several bison jumps, including the Foss Thomas Site (Fry 1971) and Level IV of the Kobold Site (Frison 1970) also date from the Late Prehistoric utilization of the area.

Historic Period. Mulloy dates the Historic Period after about A.D. 1800. Archaeologically, it is similar to the Late Prehistoric Period and for purposes of Mulloy's "Preliminary Historical Outline", they "... are separated from each other only by presence or absence of contact material (Mulloy 1958:163)."

The Battle of the Rosebud is an important, documented Historic Period event which took place in the Decker/Birney area. According to J. W. Vaughn (1956:preface):

Though the battle of the Little Big Horn, June 25, 1876, received widespread publicity ..., the Battle of the Rosebud, thirty miles southeast and occurring one week earlier -- virtually unknown except to a few students -- involved more troops, had fewer casualties, lasted for most of a day, and was of far greater historical significance.

Vaughn's book, With Crook at the Rosebud, tells of General Crook's advance from Fort Fetterman in Wyoming as one part of a government plan to bring the Sioux and Cheyenne under government control. The soldiers had been warned by Crazy Horse, an Oglala Sioux leader, not to cross the Tongue River. Crook did so and the Battle of the Rosebud followed. After the fight, Crook returned south with his wounded to take on more supplies before continuing the campaign. Thus his forces were not present, as had been planned, for the confrontation at the Little Big Horn a few days later.

The Tongue River country was part of the Cheyenne homeland in the late 1800's, a homeland that the Cheyenne were fighting to save. At Battle Butte, near the present location of Birney, another episode of the historic Indian wars took place. Colonel Nelson Miles had established Fort Keogh near the mouth of the Tongue River and was attempting to make peace with the Sioux and Cheyenne. Traveling south along the Tongue River, his soldiers had taken several Indian women captive. On January 8, 1877, the Cheyenne and Sioux fought unsuccessfully to free the captive women in the Battle of the Butte. This engagement is sometimes called the Battle of Tongue River, or the Battle of Wolf Mountain. This fight, and concern for the women they were unable to rescue, played a part in the later surrender of a group of Cheyenne under Two Moons to Colonel Miles at Fort Keogh (Stands In Timber and Liberty 1967:219-225). In a recent bestseller, Bury My Heart at Wounded Knee, Brown (1970) also gives an account of these battles.

No sites that are definitely historical were recorded during the 1972 survey. A few occupation sites may be historic in date but lack definite evidence as provided by white trade items. A metal projectile point indicates that the Cox Fortification (Fredlund 1972) is a Historic Period site. Several burial locations, probably dating to the Historic Period, were reported by local residents but none of these were recorded during the 1972 field work. Additional sites of the Historic Period are to be expected in the Decker/Birney area. The Tongue and Powder River country was one of the last strongholds of the Plains Indians who were attempting to maintain their old ways of life in the late 1800's. According to Stands In Timber and Liberty (1967:238):

The Tongue and Powder River country was some of the last to be settled by white men, and in 1880 they had not yet arrived. ... It is beautiful country, with many high hills covered with pine trees, and plentiful grass and water. Back in 1880 it was one of the last places where there were still some buffalo, and there was much other game as well.

PREVIOUS WORK IN THE DECKER/BIRNEY AREA

Introduction. There are several published works on archaeological field research in the Decker/Birney area, the most important of which are briefly reviewed below. A review of these reports supplements my field data, indicates additional references to the archaeology of the Decker area, and helps indicate both the importance and abundance of the prehistoric record in the Tongue River area.

General theoretical overviews applicable to the archaeology of the Decker/Birney area are provided by George W. Arthur, "Southern Montana" (1968), Wilfred H. Husted, "Wyoming" (1968), and Stuart W. Conner, "The Northwestern Plains: An Introduction" (1968). These articles are found in The Northwestern Plains: A Symposium (1968), edited by Warren W. Caldwell.

An important historical site in the area is the Rosebud Battlefield, reported by J. W. Vaughn in his book With

Crook at the Rosebud (1956). This historic event is reviewed elsewhere in this report. (See CULTURAL CHRONOLOGY IN THE DECKER/BIRNEY AREA section of this report).

Loendorf, Barnett, and Larson (1972). The report by Loendorf, Barnett, and Larson and my report are best viewed as being complimentary. Loendorf, Barnett, and Larson report 39 archaeological sites, for 15 of which I have site forms. To avoid unnecessary duplication in reporting, I have not written these up for inclusion in my report. These sites are ones that I recorded during the first five weeks of the field season during which time Loendorf's crew was in the field working with me. They reported the sites that we had recorded up to that time in the above cited report. Thus my report should be used along with that of Loendorf, Barnett, and Larson (1972) for the total archaeological picture as revealed by the 1972 Bureau of Land Management funded research in the Decker/Birney area. Through this combined effort, 65 archaeological sites were located and are now recorded. In addition to these, several previously reported sites in the area were also visited.

Loendorf, Barnett, and Larson (1972) provide information on the physical setting of the area including geology, climate, general vegetation, and mammals. These are not considered in my field report.

Loendorf, Barnett, and Larson (1972) organized their presentation by "type" of site. Included are descriptions of occupation sites (28), tipi ring sites (3), quarry sites (3), hunting or lookout sites (3), cribbed log structure sites (1), and rockshelter sites (1).

Frison (1970). Frison's excavations at the Kobold Site rank among the more important archaeological investigations in the Northwestern Plains within recent years. The site is located on the property of Elmer "Slim" Kobold who permitted me access to view the surface features at the site. This stratified bison jump, containing four cultural levels, is located near the head of Rosebud Creek.

Frison (1970:32-33) writes that "Level I of the Kobold site demonstrates evidence of an altithermal occupation of which little is known, except that they were using projectile points typologically similar to those of the Late Middle Prehistoric period." In view of the fact that Level II contained Early Middle Prehistoric Period projectile points, this seems to me to raise some interesting questions concerning cultural chronology and/or projectile point typology for this area of the plains. In comparing Middle Period artifact assemblages at various sites on the plains,

Mulloy (1954a:65) notes that at Signal Butte in Nebraska the Early Middle Period occupation seems to date later than elsewhere on the plains and he is led to write that "This suggests the possibility that in some cases the Early and Late Middle Prehistoric are contemporaneous with each other, in spite of the fact that in all stratigraphic sequences now known the Late Middle styles are above the Early Middle ones. These relationships will not become clear until many more sites are excavated." Although I have not seen the original artifacts and Krieger (1964:492) warns that "There is ... a dangerous tendency among archaeologists to make identifications solely from illustrations, ... , leading to some very erroneous conclusions."; Frison (1970:9), concerning the corner-notched projectile points from Level I, writes that "If not found in this context, all would be regarded as characteristic of the Late Middle period." Thus I am led to suggest that the stratigraphy at the Kobold Site tends to support Mulloy's 1954 hypothesis. Frison (1970:33) reports that bison jumping was not being practiced during Level I times at the Kobold Site.

"The next use of the site [Level II] was in the Early Middle Prehistoric period. There seems no reason to doubt that stylized buffalo jumping was being practiced at a time period around 2500 to 3000 B.C. (Frison 1970:33)." Frison's interpretation that bison jumping was practiced in Early Middle Prehistoric times at the Kobold Site seems to increase by some 2000 years or more the antiquity of the use of the jump technique in the bison procurement economy of the Northwestern Plains. Previous evidence had suggested a Late Middle Prehistoric to Late Prehistoric date for the development and proliferation of the use of buffalo jumps. For example, Arthur (1966:45) notes a previous estimate by Wettlaufer as to the antiquity of bison jumps:

Forbis (1960:66) further stated that "Wettlaufer conservatively estimated the earliest occupation of a jump at Ft. Macleod, Alberta, at 3,000 years before present." Should this estimate prove correct, it would represent a use of jumps about 1,500 years before the beginning of Mulloy's Late Plains Period, which is the generally assumed date for the beginning of buffalo jumps. This would place the technique of buffalo jumps well back into Mulloy's Middle Prehistoric Period.

(Also see articles in The Northwestern Plains: A Symposium, edited by Caldwell [1968] and the Symposium on Buffalo Jumps, edited by Malouf and Conner [1962]).

The projectile points from Level II, the earliest evidence for use of the Kobold Site as a jump, are within the range of variation for McKean points (Frison 1970:33) as defined by Mulloy from the McKean Site in northeastern Wyoming (Mulloy 1954b). These projectile points are also referred to as Duncan and Hanna type points (Wheeler 1954). These point types have also been found at the Powers-Yonkee Bison Trap (Bentzen 1966), a site which is reviewed later in this section of the report.

The third level of the Kobold Site indicated use of the jump during the Late Middle Prehistoric Period and Level IV dates to the Late Prehistoric.

Fry (1971). The Foss Thomas Site (24BH1001) is located south of Decker, Montana but north of the Wyoming state line on the ranch of Claris Foss. The Sheridan Chapter of the Wyoming Archaeological Society and George Frison from the University of Wyoming excavated the site in August and September of 1969.

This bison jump has a sandstone ledge extending some 200 yards east west with a drop of approximately 20 feet. There is some evidence of drive lines. The Tongue River is located about one-fourth of a mile south of the site. An area of some 325 square feet was excavated below the drop-off. A layer of bison bone was found at an average depth of two feet. Bone preservation was reported as being poor at the site. "There were practically no articulated bones in the area excavated (Fry 1971:15)." Charred bone and stone were encountered in one area.

Also recovered were 117 artifacts, most of which were projectile points. The points were of the Late Prehistoric side-notched type ranging in length from three-fourths of an inch to two inches. Most of the artifacts were made of quartzite, metamorphosed shale, agate, obsidian, and chert. A few have basal notches; one point was unnotched. "A rough estimate on the date of this site would be about 800 years before present (Fry 1971:16)." Illustrations of some of the artifacts and excavation photographs are provided in Fry's preliminary report.

The Sheridan Chapter of the Wyoming Archaeological Society plans to conduct further excavation at the Foss Thomas Site.

I visited the site during the 1972 summer to familiarize myself with the surface features and record my observations of the site. My notes from the site do not add much of descriptive value. However, according to Fry

(1971:15), "... the actual campsite [which could be associated with the kill activity at this site] was not found." It was tested for at a location about 150 feet west of the jump but the evidence was inconclusive. I noticed flakes appearing in blowouts around a series of small sandstone outcroppings east of the kill. Perhaps this represents an area of occupation used in conjunction with the jump and should be tested. I found no diagnostic artifacts in this vicinity which is just across a fence line and on the property of James Muller.

Claris Foss showed me several artifacts in his possession which had been found on the surface in the vicinity of the jump. These were sketched and the outline drawings accompany my notes and site forms now on file at the University of Montana. Most of the projectile points conform typologically to those reported from the bone deposit by Fry (1971), but two appear to be corner-notched or stemmed. Foss also reported having found a mano near the jump.

While looking over the site I observed fragments of burned and unburned bone and the basal portion of a small side-notched projectile point of red metamorphosed shale (Fig. 1) that had either recently weathered out, or had been overlooked during excavation. This point is similar to the type reported from the site by Fry.

Several local residents reported that they thought there may have been a low, rock "corral" below the rim which helped detain the animals while they were dispatched.



Fig. 1. Artifact
from 24BH1001.

Carbone (1972). Gerald Carbone is a member of the Sheridan Chapter of the Wyoming Archaeological Society who has a long-standing familiarity with the Tongue River country. In discussing this region, he separated it into three areas. His Area 1 includes the headwaters of the Tongue River in the Big Horn Mountains of Wyoming. Area 2 is the Wyoming/Decker area. Area 3 includes the lower Tongue River north of Decker. Thus my 1972 survey area falls within portions of what Carbone has designated as "Area 2" and "Area 3". Carbone discusses types of sites including occupation areas, petroglyphs and pictographs, tipi rings, wooden structures, and quarry locations as they are represented in these three areas. Descriptions of individual sites are not included as the purpose of his

report seems to be to provide a general overview of the Tongue River area. Carbone's article is well illustrated. His illustrations of artifacts indicates a greater temporal variation than revealed by my one summer of survey.

Carbone reports that quartzite tempered pottery is commonly found in the Tongue River area. I found no pottery at the several Late Prehistoric Period sites that I recorded. However, most of the occupation sites that I located and recorded seem to date to the pre-pottery Late Middle Prehistoric Period. Our present understanding indicates a rather late date for the appearance of pottery on the Northwestern Plains.

Fredlund (1972). During the summer of 1971 Fredlund surveyed an area in the Pond Creek valley west of the present location of the Decker Coal Company mine. This area is located about 2 1/2 miles north northeast of the Decker postoffice.

Fredlund reports the Decker Hearth Site which is a single firehearth exposed in a dry wash at a depth of two feet. An eared projectile point was recovered in the general vicinity but was not definitely associated with the hearth.

"Lookout" sites were found along the ridges overlooking the Pond Creek basin. The Buzzard Point Site, for example, seemed to have been used on a number of occasions. At the site flakes of metamorphosed shale were spread over a 10 square yard area. Concerning such observation posts, Fredlund (1972:22) writes, "Their abundance suggests that utilization of ridges as lookouts or as travel routes was important in the lifeway of prehistoric peoples." Their importance is suggested to lie both in the economy and in the detection of other people.

The Cox Fortification is located on the ridge north of the Pond Creek basin. Fredlund (1972:16-17) describes the site as being "... an apparent fortification site composed of several disturbed, small tipi rings situated 30 feet north and in front of a rock barricade." The rock wall barricade, averaging approximately two feet high, was made from sandstone slabs that occur naturally in the vicinity. The wall extends from one edge of the ridge to the other, a distance of approximately thirty feet. Mr. Cox, the resident manager of the property on which the site is located, reported having found both a small side-notched stone point and a metal projectile point at the site. The metal point is a white manufactured trade item indicating a Historic Period date for this site.

An Eden Valley type projectile point found by Fredlund adds considerably to the cultural time depth for the Decker area. Fredlund (1972:21) writes, "The finding of the Eden Valley point indicates that people utilized the Decker area as long ago as 8000 B.C." This well made point of red metamorphosed shale was an isolated surface find in a dry wash that could not be tied to an archaeological site.

Bentzen (1966). Located in Powder River County east of the Tongue River, is the Powers-Yonkee Bison Trap (24PR5). The site is an Early Middle Prehistoric Period bison kill. The Sheridan Chapter of the Wyoming Archaeological Society did some salvage excavation at the site after it had been extensively pot-hunted.

Testing was conducted at three localities. The material recovered typologically represents one cultural level. Approximately 100 artifacts were recovered, 95 of which were projectile points.

The projectile points are reported to be uniform in style. Eighty percent of them appear as variations of the McKean point type. Most of the points were chipped from metamorphosed shale. "The typical point, . . . , is a sharp-pointed straight-sided, finely pressure-flaked point with basal notch and corner notches giving a constricted base (Bentzen 1966:18)." A radiocarbon date on charcoal from the site indicated an age of 4450 ± 125 years B.P.

Bison apparently were driven into a north/south running arroyo and then were turned, perhaps with the aid of a barricade, into a smaller east/west arroyo where they were trapped at the upper end and shot. The bison are reported to have been a form intermediate between Bison bison and Bison antiquus (Bentzen 1966:18).

On a knoll one mile north of the trap there are five tipi rings. Thirty-one stone artifacts were found on the surface in this area which "... correlated in material, workmanship and type with those from the bison trap. This location being near a spring, it may possible have been a campsite used at the time of the bison trap (Bentzen 1966:18)."

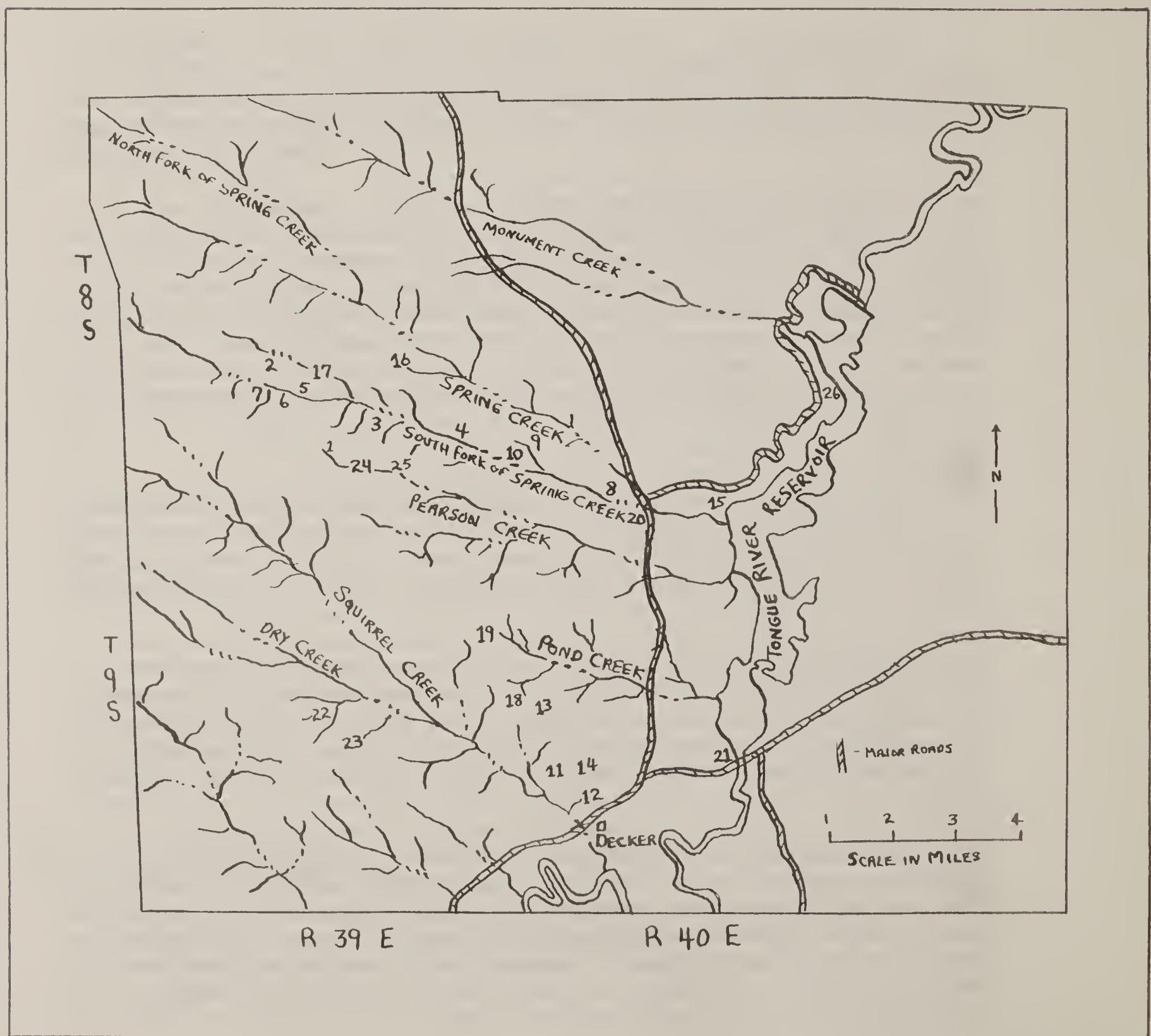
Visborg (1972). Visborg reports what apparently is an important Late Prehistoric Period occupation site and workshop. The site is located approximately 30 miles east of Decker on a hill above Hanging Woman Creek. The site centers around a large sandstone outcropping near a perennial water supply.

Artifacts recovered from the site included side-notched and unnotched triangular projectile points, end scrapers, stone drills, knives, bone awls, tubular bone beads, shell beads, manos and a metate.

SITE DESCRIPTIONS, LOCATIONS, MATERIAL COLLECTED, AND RECOMMENDATIONS

Introduction. This section of the report describes the body of data that was gathered during the 1972 field work. The descriptions are taken from the site forms and observations made in the field. Organization of this section presents the sites in order of the numerical sequence used in recording archaeological sites. A total of 27 archaeological sites are reported here. 24BH1041 is the first site, 24BH1069 the last. Gaps in the numbering represent sites reported by Loendorf, Barnett, and Larson (1972). The site designation 24BH1041, for example, indicates that this site is number 1041 recorded in Big Horn County (BH), Montana (24). Thus the Smithsonian Institution numbering system distinguishes this site from all other archaeological sites. In addition to the site number, each site has been given a name. For example, 24BH1041 is the Pearson Creek Site.

The format for presentation of this material begins with a description of the site including such observations as general topographic location, surface features, present vegetation, and nearest water source. This is followed by a discussion of the artifacts and other materials such as stone types represented in the lithic sample, bone, and shell that were collected from the surface of the site. The more important, diagnostic artifacts are illustrated to accompany the often rather brief written descriptions. All artifact illustrations are actual size and attempt to accurately portray features of manufacture. Then, recommendations for further work at the site are suggested. These often include a recommendation for testing if the site is to be disturbed by future resource development. Viewing archaeological sites as a non-renewable resource, my policy towards recommending further work at sites in danger of disturbance may be considered liberal. Some sites due to their small size, type, or scant and scattered surface evidence have not been recommended for further work. It is felt that the contribution these sites have to make to



- 1 -- Pearson Creek Site (24BH1041).
- 2 -- Boulder Spring Site (24BH1044).
- 3 -- Prairie Spring Site (24BH1045).
- 4 -- Spring Creek Petroglyph Site (24BH1046).
- 5 -- South Fork Jump (24BH1047).
- 6 -- Short Stay Site (24BH1048).
- 7 -- Few Flakes Site (24BH1049).
- 8 -- Old Buffalo Site (24BH1050).
- 9 -- Two Valley Overlook (24BH1051).
- 10 -- South Fork Bottom Site (24BH1052).
- 11 -- 21 Ranch Site (24BH1053).
- 12 -- Squirrel Creek Breastworks (24BH1054).
- 13 -- High & Dry Site (24BH1055).
- 14 -- Quarry Knoll Site (24BH1056).
- 15 -- Red & Gray Site (24BH1057).
- 16 -- Few Pines Site (24BH1058).
- 17 -- Carbone Quarry (24BH1059).
- 18 -- Divide Site (24BH1060).
- 19 -- Pond Creek Site (24DH1061).
- 20 -- Miner Ranch Site (24BH1062).
- 21 -- Munson Ranch Site (24BH1064).
- 22 -- Three Forks Spring Site (24BH1065).
- 23 -- I Don't Know Site (24BH1066).
- 24 -- Canyon Rim Site (24BH1067).
- 25 -- Boulders & Yucca Site (24BH1068).
- 26 -- North-of-Camp Site (24BH1069).
- . Slim's Rings Site (24BH1063) -- Not Shown.

Fig. 2. Map showing the general location of the archaeological sites in the Decker area which are reported in the descriptive section of this report.

the archaeological understanding of the area has been adequately recorded on site forms during the field survey and that further work at these sites would not be commensurate with their slim potential for providing additional useful data.

Pearson Creek Site (24BH1041)

This site had been located and recorded earlier in the summer by Mel Barnett, Tom Larson, and Tony Dolphin; members of Lawrence L. Loendorf's 1972 survey crew. (Loendorf, Barnett, and Larson 1972:56-59). I "rediscovered" the site at a later date. In view of the collection of additional artifacts the data I recorded for the site will be presented here.

Location. SE 1/4 of SW 1/4 of Sec. 27, T8S, R39E

Site Description. The site is located at the head of Pearson Creek canyon at an elevation of 4100 feet. From a position bordering on the canyon rim, the site adjoins the edge of the high prairie-plain between the South Fork of Spring Creek and Squirrel Creek. The presence of a few cottonwood trees may indicate a seasonal spring at the head of the canyon. There is also the presence of a historic windmill at the site, but as of a late August recording there was no water available. Vegetation in the vicinity of the site includes cottonwood, a few ponderosa pines and junipers, skunkbush sumac, rose, big sagebrush, snakeweed, bluebunch wheatgrass, blue gramma, and other prairie grass and forb species.

The site is a comparatively large one, extending at least 150 by 100 yards as indicated by scattered flakes of stone. Designation as an occupation site seems justified by the various tools found on the surface, the presence of pressure retouch as well as percussion flakes, areas of flake concentration, and charcoal revealed by recent rodent workings at the site. The possibility of a two component site is suggested by the finding of what is probably a Late Prehistoric Period triangular projectile point in addition to the predominant occurrence of Late Middle Period points. The size of the site suggests reuse on several occasions during Late Middle Period times.

Material Collected. Stone tools collected during my visit to the Pearson Creek Site include two corner-notched projectile points of gray metamorphosed shale (Fig. 3:A&B), a side-notched point or small hafted knife of dark red metamorphosed shale (Fig. 3:C), and a triangular point of dark

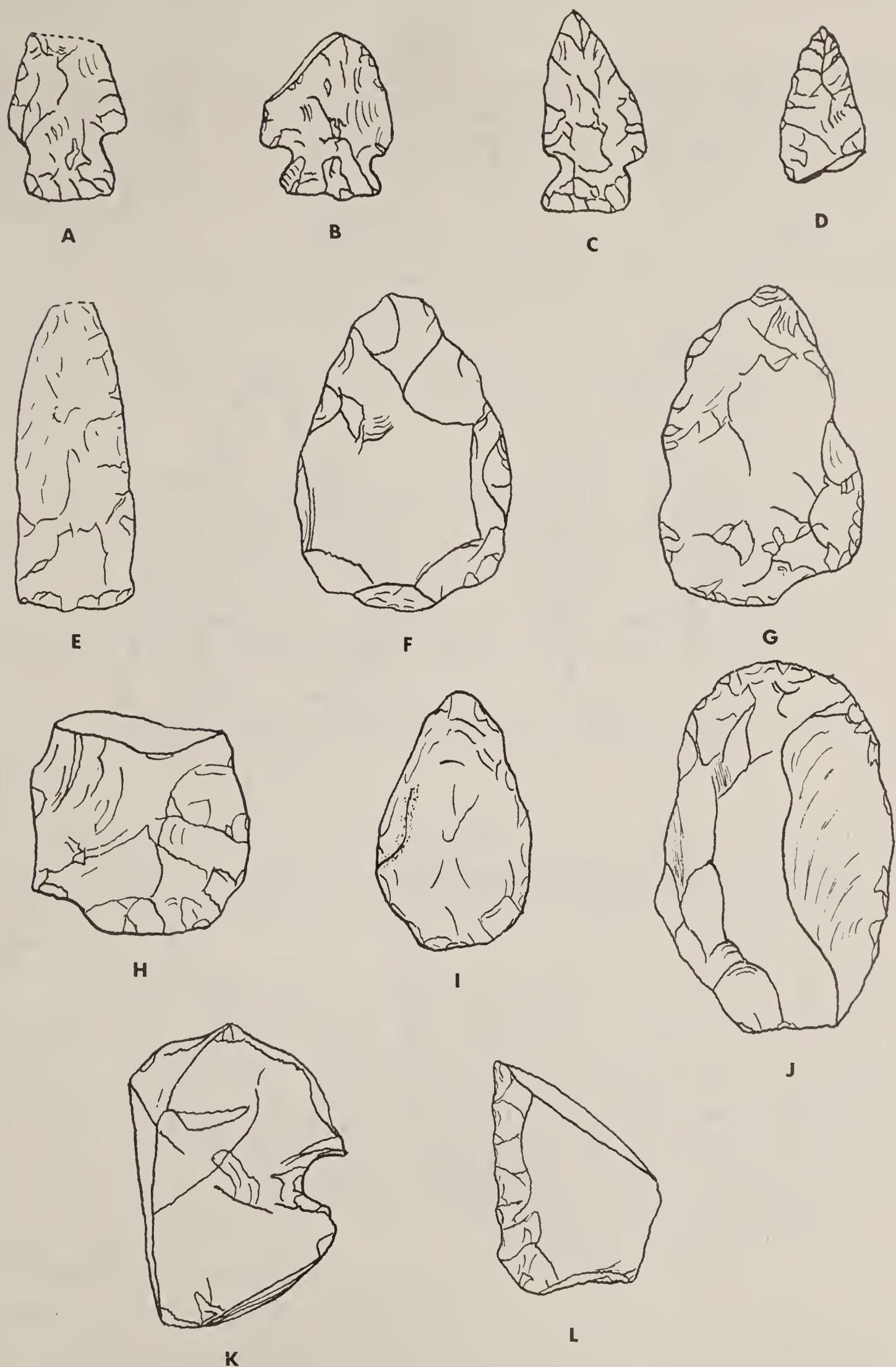
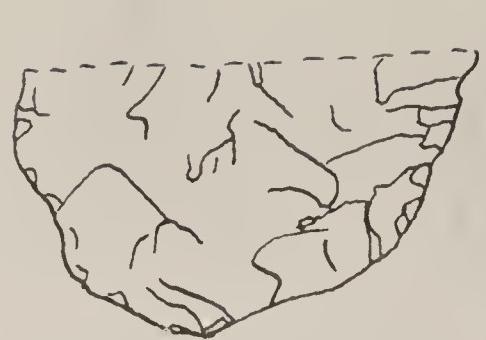
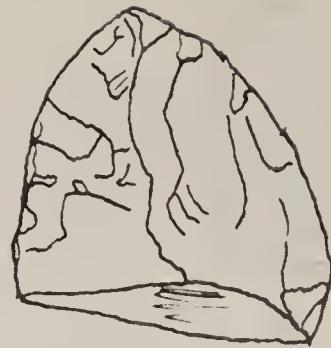


Fig. 3. Artifacts from the Pearson Creek Site (24BH1041).



A



B



C



D



E



F



G

Fig. 4. Artifacts from the Pearson Creek Site (24BH1041).

metamorphosed shale (Fig. 3:D). This last projectile point seems to be of the type characteristic of the Late Prehistoric Period on the Northwestern Plains but there is some question as to the identification of the specimen because the base is broken.

Knives were well represented in the surface collection. A thin, well made knife of gray metamorphosed shale is shown in Fig. 3:E. Three other knives of gray metamorphosed shale are illustrated in Fig. 3:F,G,&H. A small knife of purple quartzite is shown in Fig. 3:I. Fragments of nine other metamorphosed shale knives, or bifacially worked tools, were collected and several of these are illustrated in Fig. 4:A,B,C,D,&E.

Scrapers include a large end scraper of gray metamorphosed shale (Fig. 3:J) and a broken side scraper of dark metamorphosed shale (Fig. 3:L). Fig. 4:F portrays a broken biface of light gray chert which may have served as a large knife or chopping tool. Fig 4:G illustrates a large bifacially worked piece of gray metamorphosed shale. A spoke-shave of dark metamorphosed shale was also found at the site (Fig. 3:K).

Illustrations of additional artifacts found on the surface of the Pearson Creek Site appear in Loendorf, Barnett, and Larson (1972:58).

Metamorphosed shale varying in color from gray to dark red is the predominant type of lithic material found at the site; but also represented by a few flakes are red jasper, a red and gray-green igneous material, clear agate, and white chert.

Recommendations. Considering the size of the Pearson Creek Site, the placement of test pits at several locations is recommended. If these prove productive, excavations should be expanded. The presence of subsurface material at the site is indicated by flakes and charcoal being brought to the surface by rodent activity. One test pit should be placed in the vicinity of the suspected fire hearth as indicated on the site map accompanying the original site form. Further surface collection would undoubtedly produce additional artifacts.

Boulder Spring Site (24BH1044)

Location. NE 1/4 of NW 1/4 of Sec. 21, T8S, R39E

Site Description. The Boulder Spring Site is located near the head of a side canyon on the north side of the South Fork of Spring Creek at an elevation of 4060 feet.

A grove of cottonwood trees seems to indicate a water source. I was told that there is a spring in this area but did not see any flowing water during my brief stay at the site. Several modern reservoirs have been constructed in this vicinity. A series of sandstone boulders outcrop along a knoll northeast of the suspected spring location. Thinly scattered lithic debris occurred throughout this area. Depth of cultural deposits at the site was estimated to range from surface to several inches.

Vegetation includes big sagebrush, prairie grasses, cottonwood along the spring course, and a few ponderosa pines around the sandstone outcroppings. Water presumably would have been available at the spring beside the site. A modern reservoir below the spring was holding water as of late July.

Material Collected. Four flakes of metamorphosed shale and one of red jasper were found on the surface of the site. No diagnostic artifacts were collected. Jim Miner, a local rancher, reported having found several artifacts in this vicinity.

Recommendations. More work needs to be done at this site. A large herd of cattle and a rather heavy plant cover resulted in my spending only a few minutes on the site and collecting very little material. More surface collecting is recommended. It is necessary to determine the area of the site, prepare a sketch map, and take photographs. It seems likely that these activities needed to complete adequate recording of the site will lead to a recommendation for testing.

Prairie Spring Site (24BH1045)

Location. NW 1/4 of NW 1/4 of Sec. 26, T8S, R39E

Site Description. The Prairie Spring Site is located on the valley floor of the South Fork of Spring Creek just north of a low swale where a small spring emerges. The site is situated at an elevation of 3720 feet.

Scattered lithic debris covers an area of approximately 50 by 50 yards. Due to the kinds of artifacts recovered and the general setting, it is felt that the site was used as an occupation area. An opening between the ridges to

the north of the site permits easy access into the Spring Creek valley. The view from the site is restricted by ridges to the north and south of the site which define the South Fork of Spring Creek valley. The valley floor is about one mile wide in the vicinity of the site.

The site is located beside a small spring which was still flowing slightly in late July, the recording date for the site. There are a few dead deciduous trees standing in the area. Scattered cottonwood trees grow at other points along the stream. Present vegetation on the site includes big sagebrush, various prairie grasses, and forb species. Sedge grows in the moist swale near the spring.

Material Collected. Artifacts found on the surface of the Prairie Spring Site include the base of what seems to have been a corner-notched projectile point of gray metamorphosed shale (Fig. 5:A), a brown chert end scraper (Fig. 5:B), a broken side scraper of rose colored agate (Fig. 5:C), and a broken knife of red metamorphosed shale (Fig. 5:D). Three bifacially worked fragments of gray metamorphosed shale (Fig. 5:E illustrates one of these), a small biface of black flint, and a thin midsection of a red metamorphosed shale tool (Fig. 5:F) were also recovered.

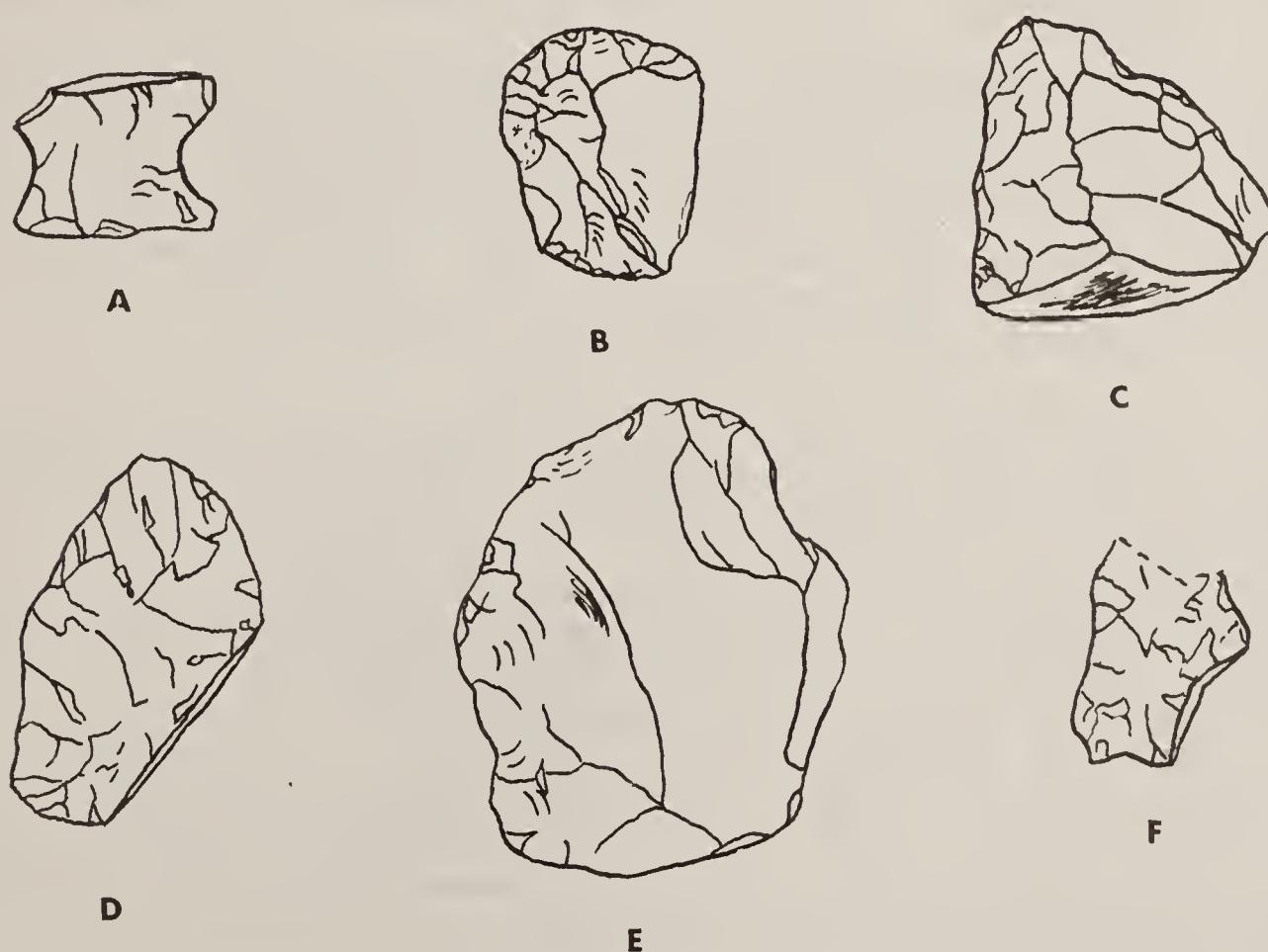


Fig. 5. Artifacts from the Prairie Spring Site (24BH1045).

Lithic materials scattered over the surface of the site were predominantly of gray and red metamorphosed shale. Limited material of other types included two flakes of agate and one of pink chert. Jim Miner, a local rancher, reported having found several end scrapers in this vicinity.

Recommendations. The Prairie Spring Site was not initially recommended for testing. I would now, however, suggest testing if the site is to be destroyed because it does not seem to fit the general settlement pattern for this area as developed in the interpretive section of this report and further work at the site may help explain why. Depth of the cultural deposits was estimated at from surface to six inches. Much of the material collected from the surface came from an eroded portion of the site.

Additional surface collecting at the site and more survey in the vicinity, especially of the valley floor north of the site, would be desirable. Black and white photos need to be taken.

Spring Creek Petroglyph Site (24BH1046)

Location. SE 1/4 of NW 1/4 of Sec. 25, T8S, R39E

Site Description. The Spring Creek Petroglyph Site is located at a sandstone outcropping along the South Fork of Spring Creek. The south facing sandstone face is visible from the ranch road through the South Fork of Spring Creek valley. The site lies about one-quarter mile north of the present stream course. The area of the site is approximately one-fourth by one-eighth mile.

Petroglyph motifs include one panel depicting a horse and a tipi that is in excellent condition due to its protected location under a small overhang. The horse may be pulling a travois (Fig. 6). There are a few badly weathered carvings on the sandstone outcroppings in more exposed locations. These include a panel with what seems to be portions of three shield-bearing warriors, only one of which is at all well preserved (Figs. 7 and 8). The rock art at this site also portrays a horned mammal (Fig. 9). Plastic overlay copies were made of all aboriginal carvings. Occasionally, stray lines are detectable; making it seem likely that there once were more petroglyphs at this location but that they have now been weathered beyond recognition.

On high points along the ridge to the east and west

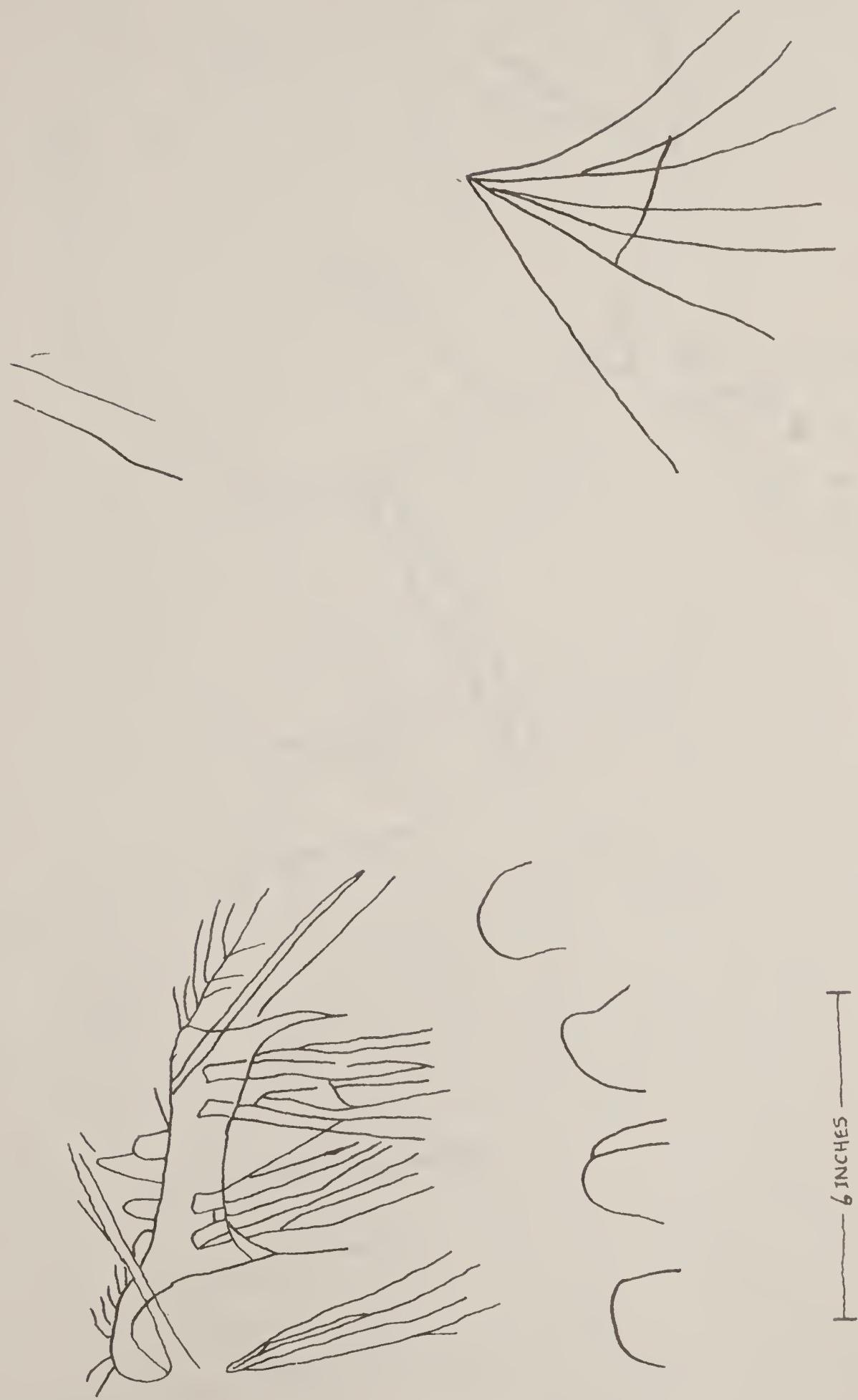


Fig. 6. Petroglyphs at the Spring Creek Petroglyph Site (24BH1046).

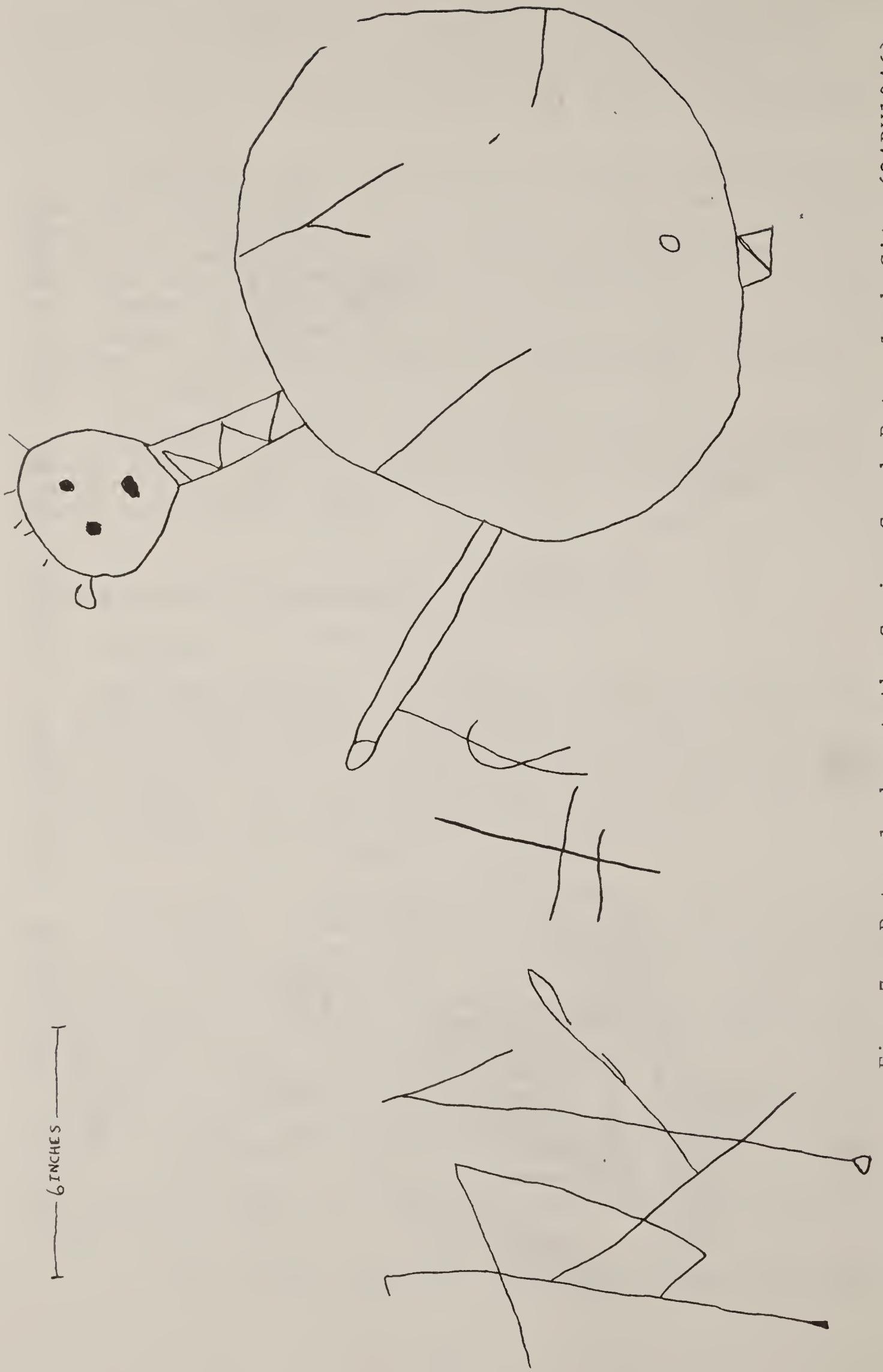


Fig. 7. Petroglyphs at the Spring Creek Petroglyph Site (24BH1046).

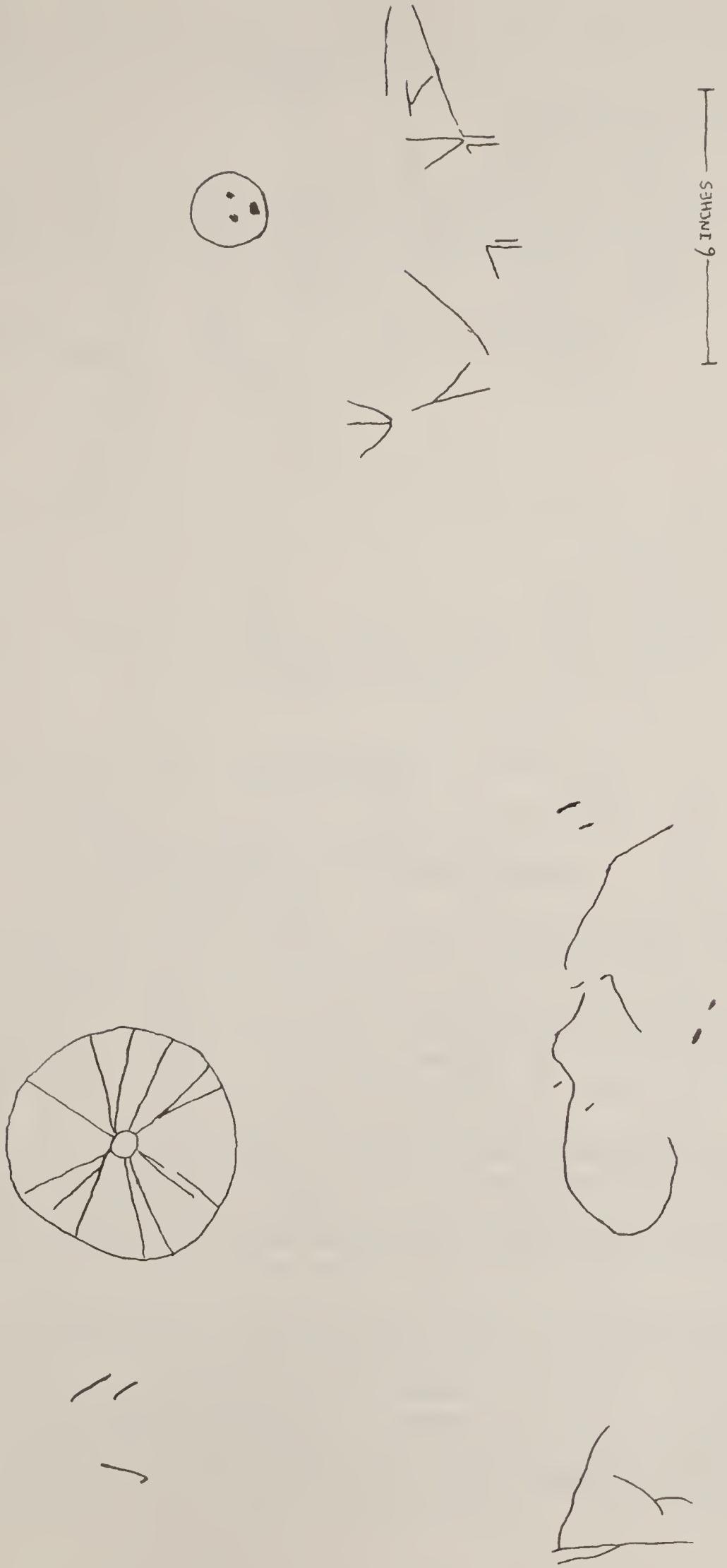


Fig. 8. Petroglyphs at the Spring Creek Petroglyph Site (24BH1046).

of the petroglyph panels, concentrations of lithic debris occur. These seem to be "lookout" locations, but of course are not necessarily contemporaneous with the rock art site. No lithic material was found in the immediate vicinity of the petroglyph panels.

Big sagebrush, prairie grasses, prairie forbs, and some juniper bushes on nearby slopes compose the present vegetation in the vicinity of the site. Water is available along the South Fork of Spring Creek about one-fourth mile south of the site.

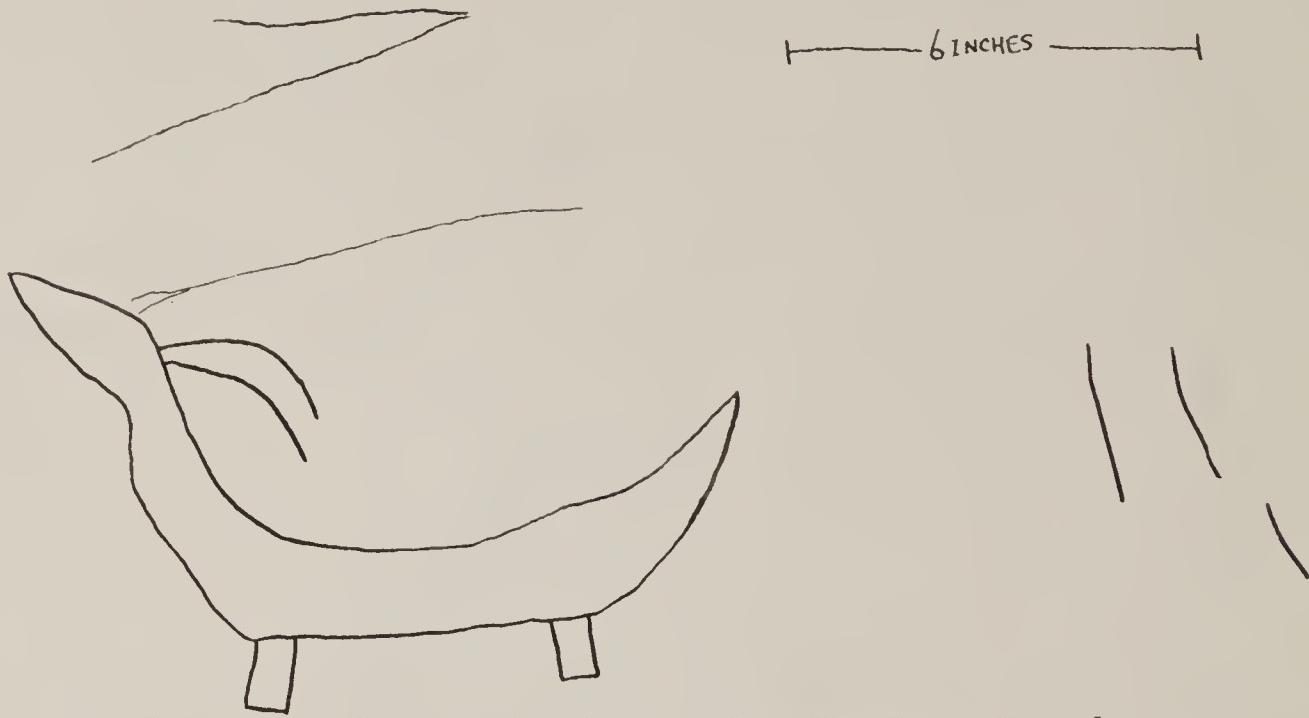


Fig. 9. Petroglyph at the Spring Creek Petroglyph Site (24BH1046).

Material Collected. Stone tools found on the high knoll east of the petroglyphs include a large gray quartzite knife (Fig. 10:A), two bifacially worked pieces of gray metamorphosed shale (Fig. 10:B&C), and a retouched flake of reddish chert (Fig. 10:D). Flakes from along the ridge east and west of the petroglyph panels were mostly percussion flakes of gray metamorphosed shale. A few flakes of dark metamorphosed shale were also present. It seems likely that metamorphosed shale occurs naturally along this ridge and that the areas where flake concentrations were noted indicate locations where limited quarrying and rough stone working activities were carried out.

Recommendations. The Spring Creek Petroglyph Site needs to be photographed in black and white. Testing in the vicinity of the aboriginal petroglyphs may be advisable if the site is to be destroyed as weathering of the sandstone faces may have covered any cultural material in the area below the petroglyph panels.

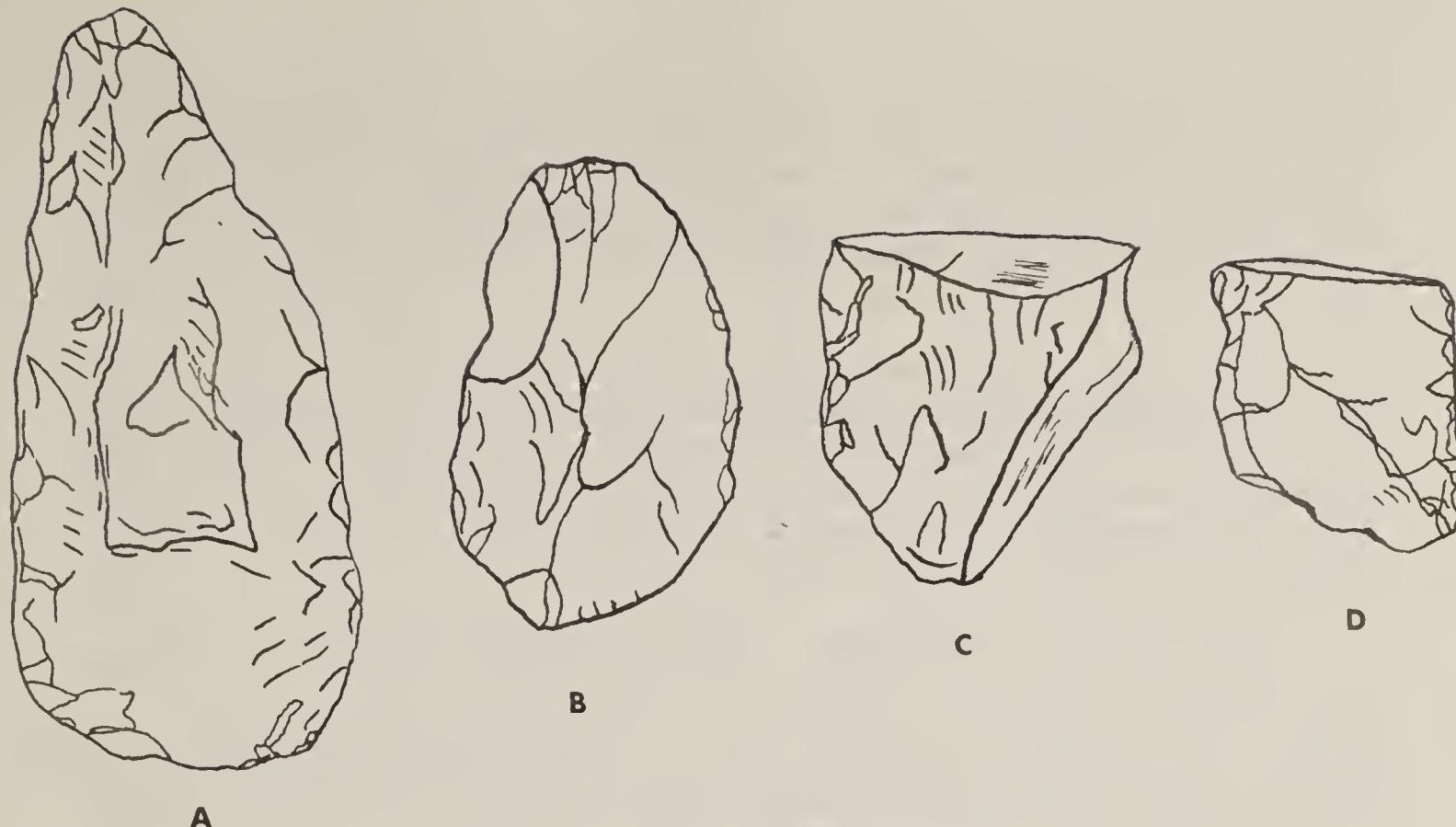


Fig. 10. Artifacts from the Spring Creek Petroglyph Site (24BH1046).

South Fork Jump (24BH1047)

Location. NW 1/4 of SE 1/4 of Sec. 21, T8S, R39E

Site Description. The South Fork Jump is located in a shallow draw along the South Fork of Spring Creek valley at an elevation of 4000 feet. The site is possibly a small bison jump or kill site. The Short Stay Site (24BH1048), which is the next site discussed in this report, is situated on the valley floor just southeast of the South Fork Jump -- an occupation area that may have been used in conjunction with this kill site.

The notion that bison is the animal involved here is based on one small horn core fragment found on the surface which seems most likely to be bison. The site is well defined and easily recognizable by a dense stand of wild rye grass growing at the head of a small side canyon leading into the South Fork of Spring Creek. The rye grass covers an area approximately 10 by 15 yards. The thick stand of wild rye did not seem natural at this location and closer investigation revealed three bone fragments in eroded areas. In the vicinity of the rye grass stand were the one horn core fragment, and a small, unidentifiable bone scrap. A rib fragment was found protruding from the dry wash in the draw approximately 15 yards below the wild

rye grass. An impression recorded at the site was that animals driven over the rim here probably would have tumbled further down the slope. It seemed unusual that more bone could not be found in eroded areas below the stand of grass. Compared to other bison jumps known in the Decker/Birney area, this is a very small kill site.

Vegetation at the site includes the thick stand of wild rye grass which led me to the site. Juniper, ponderosa pine, big sagebrush, yucca, skunkbush sumac, and various prairie grasses are also present in the draw. Water is available along the South Fork of Spring Creek about 75 yards south of the site.

Material Collected. Several bone fragments, as indicated in the site description, were found on the surface of the site. No projectile points, other tools, or flakes of stone could be found on the surface or in eroded areas which would have definitely indicated association of human activity with this site.

Recommendations. It is recommended that the site be tested to determine if it is a kill site. If it is a kill site, the test excavation should be expanded to gather more data including a projectile point and a carbon-14 sample to indicate the temporal dimension of the site and bone material which may suggest the season of use. The ridge north of the site needs to be surveyed and photos should be taken. Estimated depth of the cultural deposits at the site is from 6 to 24 inches below the present surface.

Short Stay Site (24BH1048)

Location. SW 1/4 of SE 1/4 of Sec. 21, T8S, R39E

Site Description. The Short Stay Site is situated on the valley floor along the South Fork of Spring Creek at an elevation of 3880 feet. Thinly scattered lithic debris was found over an area of about 50 by 30 yards. Much of the material that was collected came from along a ranch road that passes through the site. The artifacts in the ranch road -- an eroded area -- suggests that much of the site may be subsurface. Depth of the cultural deposits at the site was estimated at from surface to 12 inches.

An area strewn with lithic debris was noted along the ridge top north of the site which may be associated with the Short Stay Site as a "lookout" location. The view from

the site on the valley floor is limited by ridges on the north and south. The South Fork Jump (24BH1047), possibly a small bison jump or kill site, is located a short distance to the northwest. Perhaps the Short Stay Site was an occupation area associated with the game procured at this kill site.

A water supply is convenient as the site borders on the South Fork of Spring Creek which contained water at this location as of late July. At present, wood is available in the form of ash trees along the stream and juniper bushes on nearby slopes. Vegetation in the vicinity of the site also includes big sagebrush, prairie grasses, and, wild rye grass along the stream. During the survey, deer were frequently sighted in the side canyons in this area.

Material Collected. Artifacts found on the surface of the Short Stay Site include a thick biface or chopper (Fig. 11:A), a biface with a nearly square outline (Fig. 11:D), and the bases of two knives (Fig. 11:B&C). All are made of dark red metamorphosed shale. Flakes of red, gray, and dark red metamorphosed shale were also collected from the surface of the site.

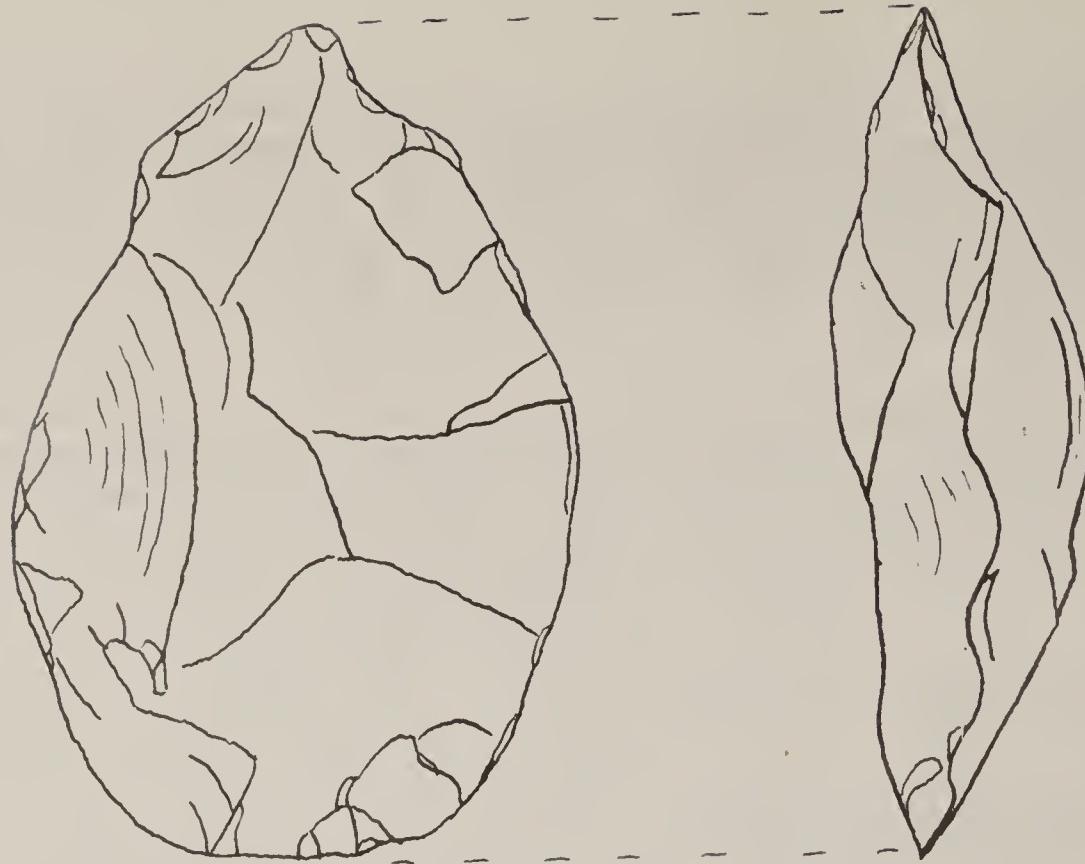
Recommendations. It is recommended that the Short Stay Site be tested along with testing of the South Fork Jump. An old cattle feeding station, or salt lick location, and a windmill are modern developments present at the site; and cattle may have disturbed much of the site. Black and white photos should be taken as this was not done at the time of initial recording of the site.

Few Flakes Site (24BH1049)

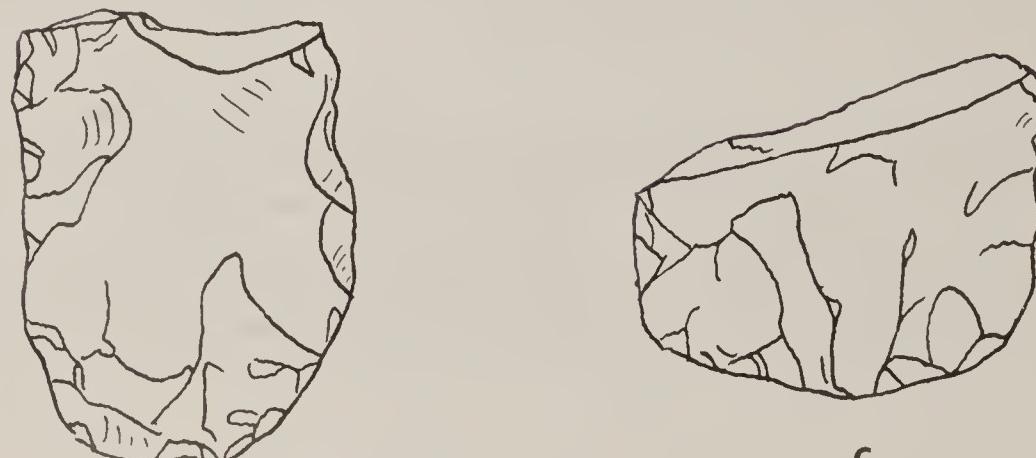
Location. NE 1/4 of SW 1/4 of Sec. 21, T8S, R39E

Site Description. The Few Flakes Site is located on the north side of the South Fork of Spring Creek about one-fourth mile northwest of the Short Stay Site (24BH1048). It lies at an elevation of 3940 feet. A very few, thinly scattered flakes were found over an area of 20 by 30 yards on the gradually sloping valley floor. Depth of the cultural deposits at the site was estimated to range from surface to 12 inches. Some material at the site may be covered by recent soils. Vegetation covering the area is moderately heavy.

Water is conveniently available at the South Fork of Spring Creek on which the site borders. Present vegetation

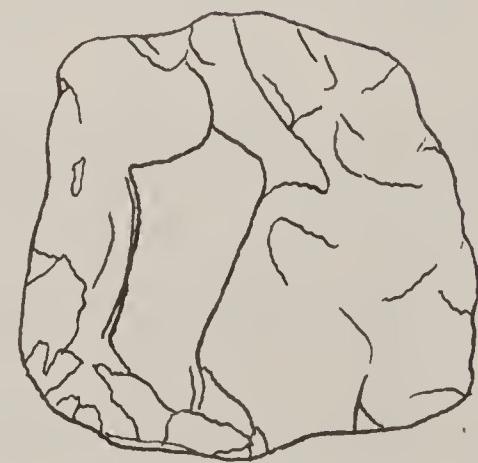


A



B

C



D

Fig. 11. Artifacts from the Short Stay Site (24BH1048).

includes big sagebrush and various prairie grasses and forbs.

Material Collected. Several flakes of gray metamorphosed shale and one quartzite flake were found on the surface of the site. No diagnostic artifacts were recovered.

Recommendations. Surface materials at the Few Flakes Site did not indicate much potential for significant subsurface material. Accordingly, the site is not recommended for testing.

Old Buffalo Site (24BH1050)

Location. SE 1/4 of NE 1/4 of Sec. 32, T8S, R40E

Site Description. The Old Buffalo Site is exposed in the cut banks along the South Fork of Spring Creek west of the Miner Ranch. Bison bone was exposed by weathering at four places within a distance of approximately 50 yards along the cut banks of the stream. At one location a skull and scapula are visible 6 to 6 1/2 feet below the present surface in association with flecks of charcoal. The bone does not seem to be charred. About 15 yards east, the horn of another skull was slightly exposed at a depth of 7 1/2 below the surface. Bone was also exposed at two other locations in the stream cut banks and was present in the stream bed as well. No artifacts, flakes, or other evidence of human association were noted.

Several sage species, prairie grasses, some skunkbush sumac, juniper, and wild rye grass grow along the South Fork of Spring Creek in the vicinity of the site. As of late July, 1972, the creek was dry at this location and the nearest water source was a small seep spring 100 yards downstream.

Material Collected. Several bone fragments, including one split longbone, were collected from the stream bed. Presumably these had been weathered out of the prairie soil deposit through which the South Fork of Spring Creek has cut its course.

Recommendations. The depth of the bone at the Old Buffalo Site, 4 to 8 feet below the present surface, makes it intriguing. It seems suspicious that the remains of at least two bison should be present within an area of 20 by 50 yards. The presence of charcoal associated with the bone at one location hints at human involvement and although there was no definite cultural evidence found, I feel that

conditions are such that the site should be tested. Testing should determine whether or not the site is of archaeological interest. Overburden will be of some problem in the testing of this site.

Two Valley Overlook (24BH1051)

Location. NE 1/4 of SW 1/4 of Sec. 30, T8S, R39E

Site Description. Located on a high point with a good view of the surrounding country, the Two Valley Overlook Site seems to be a "lookout station". From an elevation of 3800 feet, the site commands an excellent view to the north and west of the Spring Creek and South Fork of Spring Creek valleys. It is situated on the western end of a high ridge and there is a break in topography so that just to the east there is an easy pass between the two previously mentioned drainages.

Cultural evidence at the site consisted of thinly scattered lithic debris covering an area of about 10 by 20 yards. Pressure retouch flakes as well as percussion flakes were present on the surface. In its exposed location, most of the site seems to be surface but some material may be slightly subsurface.

Water is not available in the immediate vicinity. Apparently, the nearest water source is the South Fork of Spring Creek about one-half mile to the south. Big sagebrush and prairie bunch grasses are the most common types of vegetation present on the site.

Material Collected. No diagnostic artifacts were found at the site. Stone flakes and cores present were predominantly of red and dark colored metamorphosed shale and some gray metamorphosed shale.

Recommendations. No further work seems appropriate for the Two Valley Overlook Site. The general character, small size, and apparent shallow depth probably would make testing unrewarding. The site has not been photographed. A few black and white pictures of the general setting might be desirable.

South Fork Bottom Site (24BH1052)

Location. SW 1/4 of SE 1/4 of Sec. 30, T8S, R40E

Site Description. The South Fork Bottom Site is located in the South Fork of Spring Creek valley. Situated on a gradually sloping terrace of the north side of the stream, the site lies at an elevation of 3640 feet.

A fairly heavy scattering of lithic debris covers an area of approximately 75 by 30 yards. Due to the tool types recovered, percussion and retouch flakes, and bone fragments, I feel the site represents an area of occupation. Several small stone rings approximately three feet in diameter and composed of five or six stones per circle were perhaps fire hearths. However, in a butchering area at one of the Piney Creek Sites (48J0312), Wyoming, Frison (1967) found fourteen features which seem to be similar to these at the South Fork Bottom Site and suggested a different possibility as to their use. At Piney Creek the features are described as small stone circles, of some seven to twelve stones each, and two and one-half to three feet in outside diameter (Frison 1967). Excavation at the site revealed that these were not fire hearths. Frison (1967:13) suggested that the small stone circles were rims for hide receptacles used in stone boiling broken-up bone to obtain grease. At the South Fork Bottom Site, small fragments of well weathered bone were in evidence at several locations on the site which suggest that it may be possible to extend Frison's interpretation to the similar features at this site. Also adding to the potential for comparability of the South Fork Bottom Site to the butchering area at Piney Creek is the number of large quartzite and metamorphosed shale knives or choppers found on the surface of the South Fork Bottom Site. Most of these tools are broken and it seems likely that tools of this size may have had their primary function in the butchering of large game animals such as bison. On the other hand, no evidence for a large scale bison kill was recorded in the vicinity of the South Fork Bottom Site other than possibly the Old Buffalo Site (24BH1050). However, the possible triangular, unnotched projectile points found at the site may indicate a rather late occupation date in which case bison may have been pursued and shot on the valley plains from horseback.

I saw no special attraction to this location as a campsite. Water may have been available along the South Fork of Spring Creek within a few yards of the site. In early August 1972, the stream course was dry south of the site but was "live" a few hundred yards upstream. Present vegetation includes big sagebrush, prairie grasses and forbs. Horse graze is available in the stream valley around the site. Higher ridges to the north and south of the site limit the view from this location. Depth of the cultural material at the site was estimated at from surface to

several inches. The artifacts recovered suggest a two component site with both components appearing on the surface.

Material Collected. A wide variety of artifacts and material types were present at the South Fork Bottom Site. Projectile points from the site included four portions of what may be small triangular points of gray metamorphosed shale (Fig. 12:A,B,C,&D); and the bases of two larger corner-notched points of red metamorphosed shale (Fig. 12:E&F). If these are, in fact, all projectile points, the variation suggests a two component site. Scrapers included a small end scraper of red jasper (Fig. 13:B) and a large end scraper of brown quartzite (Fig. 13:A). A large, well made, half-moon shaped knife of gray metamorphosed shale (Fig. 12:G) and portions of two other knives of the same material (Fig. 12:J&K) were found on the surface. Two spokeshaves of gray metamorphosed shale (Fig. 12:H&I) were collected. Fragments of eight large, bifacially worked quartzite tools (Fig. 13:E&F - illustrates two of these) were found and some twelve similar fragments of bifacially worked metamorphosed shale (Fig. 13:C&D - illustrates two of these). Two midsections of smaller tools, a tip fragment, and retouched flakes are also included in the stone tool industry known from the site. Several bone fragments were collected.

I believe it was to this site that Jim Miner referred in reporting that he had found stone artifacts in the vicinity and, that when constructing a small reservoir at the western edge of the site, a fire hearth was exposed.

The variety of material types represented in the flake sample includes gray, red, and dark metamorphosed shale; variously colored quartzites from tan and brown to purple and grayish white; agatized wood; brown and rose colored agate; red and gray igneous material; red jasper; and chert. Metamorphosed shale predominates in terms of frequency.

Recommendations. It is recommended that the South Fork Bottom Site be tested. Surface indications suggest that most of the cultural material at the site is surface and that it does not extend to a depth of more than a few inches. Testing, however, may reveal some subsurface material, clarify suspected features, and show two stratigraphic levels at some location which would help support the conjecture that this is a two component site based on stylistic differences in the projectile points recovered on the surface. Testing may also help explain the activity at the site that resulted in the large, broken knives or bifaces of quartzite and metamorphosed shale.

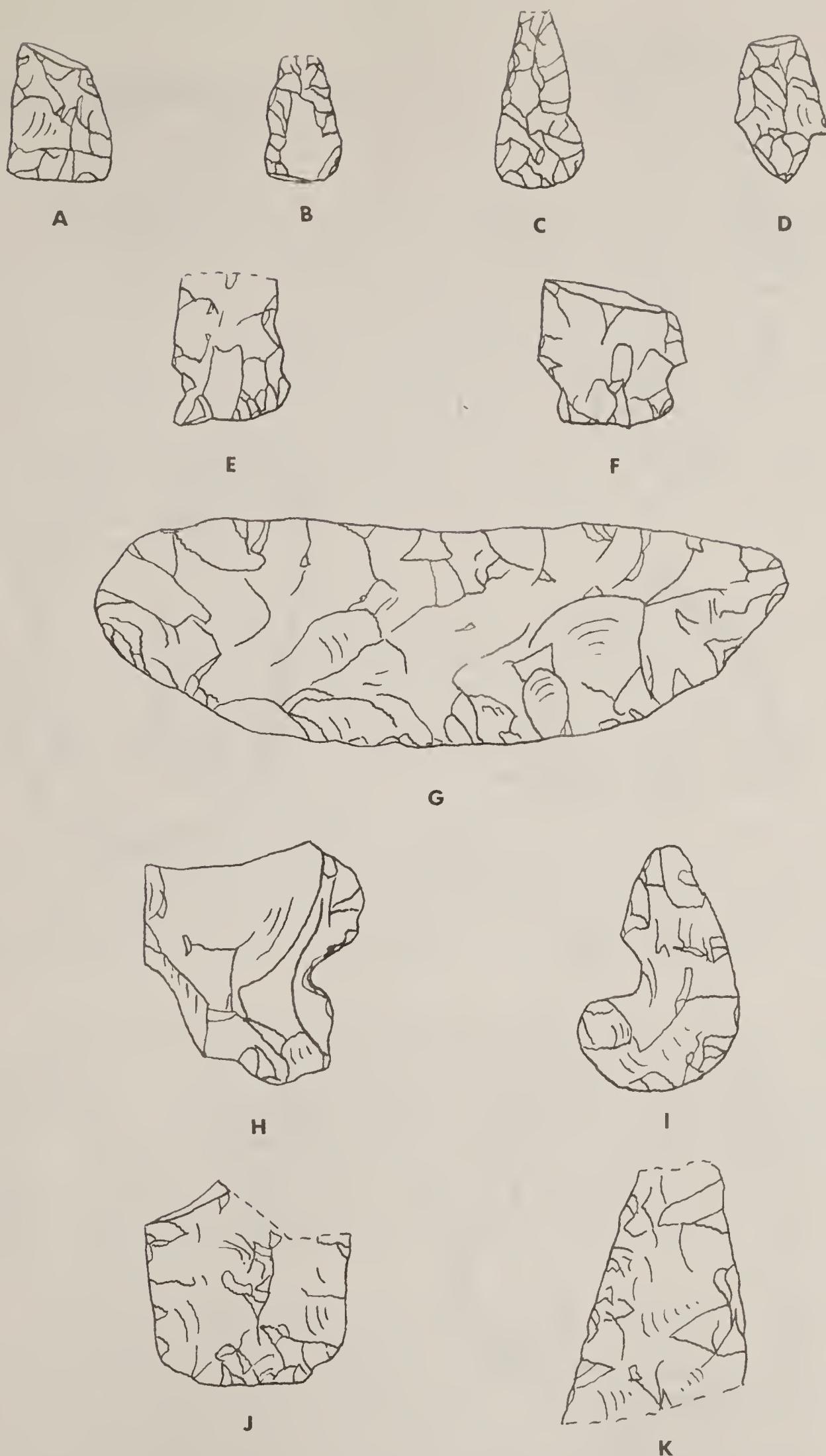


Fig. 12. Artifacts from the South Fork Bottom Site (24BH1052).

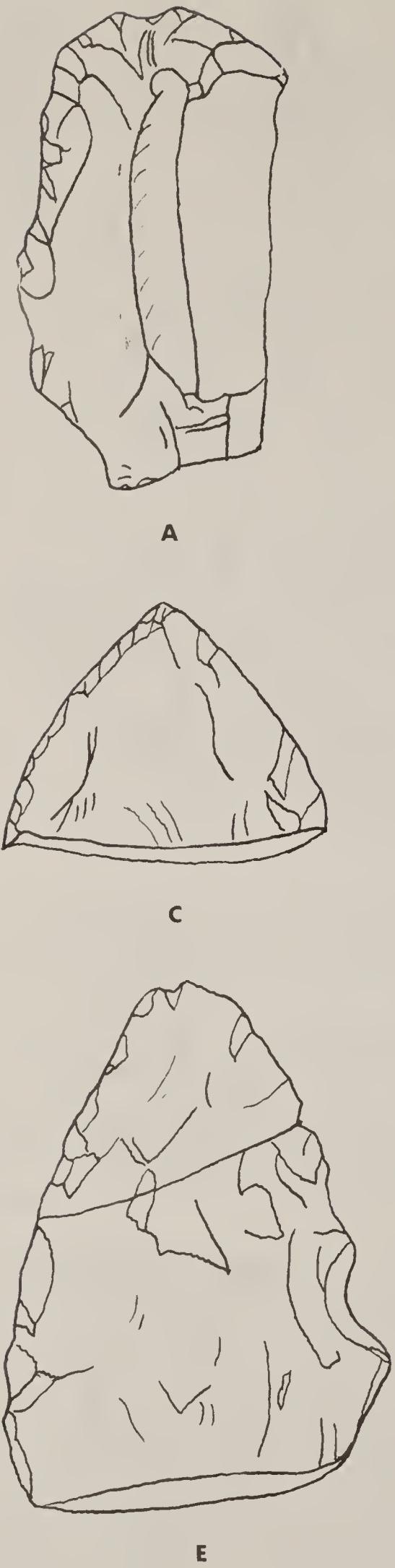


Fig. 13. Artifacts from the South Fork Bottom Site (24BH1052).

21 Ranch Site (24BH1053)

Location. SE 1/4 of SE 1/4 of Sec. 19, T9S, R40E

Site Description. The 21 Ranch Site is located in the vicinity of the sandstone outcroppings in the Squirrel Creek valley north and east of the 21 Ranch buildings. The site area extends some 100 yards by more than one-fourth of a mile. The sandstone block formations which have resisted weathering here may have been attractive to prehistoric occupants of the area due to the protection they offered and because there were limited vantage points for viewing the Squirrel Creek valley. Apparently the two most popularly used areas centered around the largest rock outcroppings; one at the extreme north and the other at the extreme south of the site and this area should perhaps be subdivided as two separate sites.

Scattered lithic debris and, possibly occupied rock shelters were found at the site. A flake concentration was noted on the mesa top at the north end of the site. A projectile point was recovered from the surface in a small overhang at the base of the mesa below the area of this flake concentration. A rock shelter at the southern end of the site contained charcoal and stone flakes.

Mr. Cox, the resident manager of the 21 Ranch, reported having seen recent name scratching on the sandstone outcroppings but nothing that he felt to be aboriginal rock art. The sandstone here is not of very firm quality and petroglyphs -- if they existed -- would have been eradicated by erosion.

Water would have been available at Squirrel Creek approximately one-fourth mile south of the site. There is a good view of the lower Squirrel Creek valley from the site but a high ridge to the north limits the view in that direction. Abundant horse graze would have been available in the stream valley adjacent to the site. Prairie sand reedgrass, other prairie grasses and forbs, skunkbush sumac, big sagebrush, and a few ponderosa pines now grow in the vicinity of the site.

Material Collected. Surface collection at the 21 Ranch Site revealed a small, triangular, tri-notched projectile point of gray metamorphosed shale (Fig. 14:A) and two small fragments of glass located in the rock shelter at the northern end of the site. A broken knife or biface tip of red metamorphosed shale (Fig. 14:B), a broken biface of black flint (Fig. 14:C), a broken quartzite river cobble, and a broken granite hammerstone with a well battered end

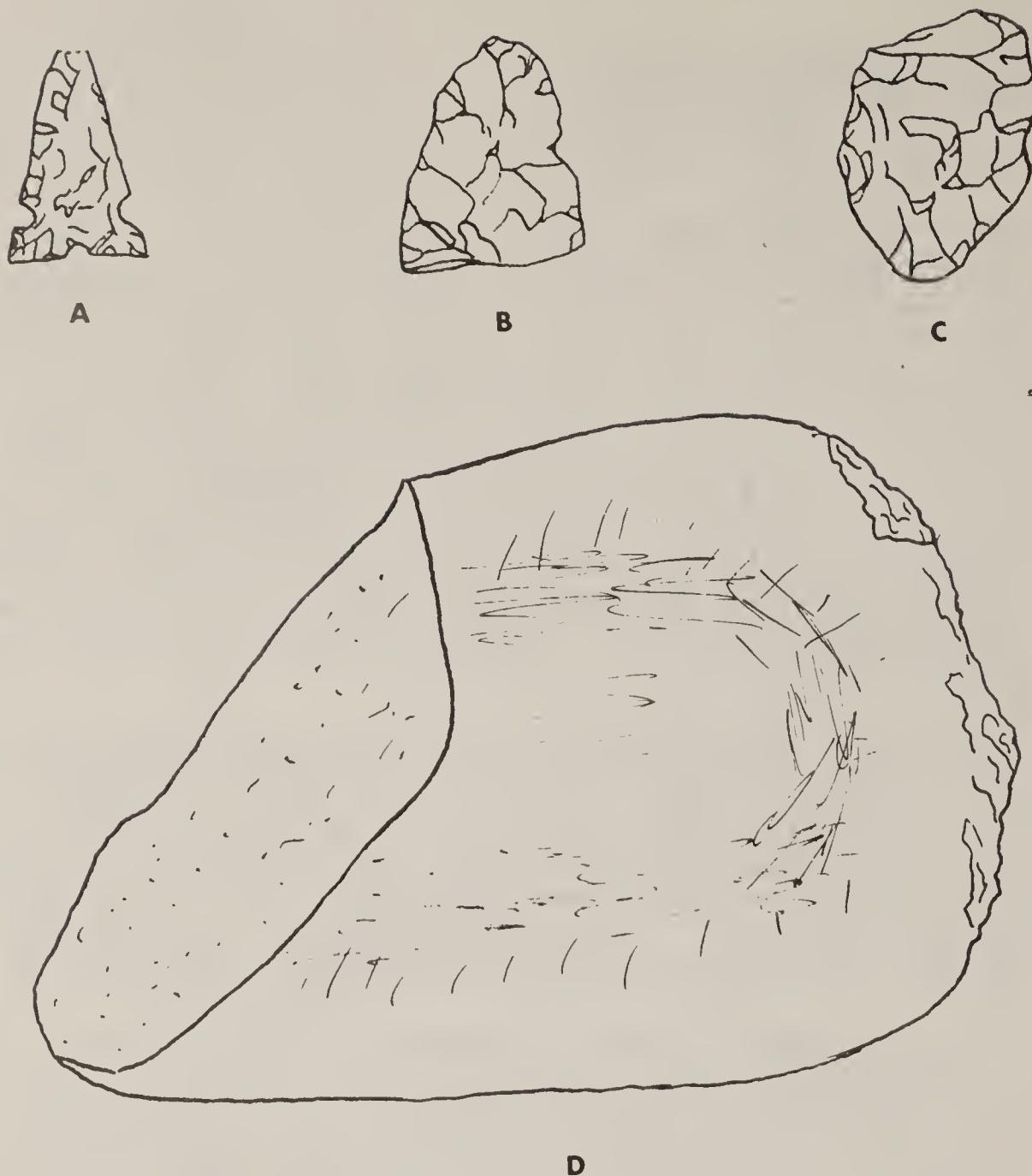


Fig. 14. Artifacts from the 21 Ranch Site (24BH1053).

(Fig. 14:D) are other artifacts which were found at the site. Flakes collected at the site are mostly the result of percussion stone working techniques, with fewer pressure flakes represented in the flake sample. Flakes are predominantly of gray metamorphosed shale.

Recommendations. Testing at several locations, including the rock shelter at the southern end of the site which seemed to contain more deposit than the one at the northern end of the site, is recommended.

A narrow passageway runs through the sandstone and connects two small shelters at the north end of the site. It appears that pack rats have dragged a number of fragments of wood and bone into this area. Although I could see nothing that was obviously an artifact, this material should be removed as part of the recommended testing. The

bones from this area might be analysed to gain some insights to the fauna being utilized at the time of human occupation. It seems unlikely that pack rats would bring in much in the way of large animal bones unless provided for them in a unique situation such as in the case of materials left by man in an occupied shelter or adjacent areas.

Squirrel Creek Breastworks (24BH1054)

Location. SE 1/4 of NW 1/4 of Sec. 29, T9S, R40E

Site Description. The Squirrel Creek Breastworks are located on a small, low knoll or mesa overlooking the Squirrel Creek valley at an elevation of 3560 feet. The surface area on top of the mesa measures approximately 10 by 15 yards. There are higher knolls to the north-east and a high ridge north of the site.

The site appeared to be two small fortification structures. The general setting makes the area doubtful as a vision quest location. On the knoll are two low, breast-work fortification structures built of small, thin slabs of sandstone that occur naturally at the site. Although there is a homestead cabin on the valley floor south of the site, the rocks of the structures are lichen-covered, somewhat sodded in, and do not seem to be of recent origin. Interior measurements were recorded for the two U-shaped constructions: Structure 1 measured 6 by 6 feet and 6 to 8 inches high, with the open end facing west. Structure 2 was 3 feet by 2 feet and 6 to 8 inches high, with the open end facing east. The second structure is less well formed (not as U-shaped) than the first, or it may have been disturbed since its original construction. The structures seem to "safeguard" opposite sides of the small butte on which they are located. It appeared that offenders would not have been likely to easily oust defenders from this position without risk of casualty to themselves.

Big sagebrush, skunkbush sumac, prairie grasses, and forbs comprise the vegetation in the vicinity of the site. The Squirrel Creek valley is broad in this area; the stream is approximately one-half mile south of the site.

Material Collected. No artifacts were found near this site.

Recommendations. The rock structures and general setting should be photographed in black and white.

High & Dry Site (24BH1055)

Location. Center of SE 1/4 of Sec. 18, T9S, R40E

Site Description. The High & Dry Site is located on a relatively high ridge between two canyons at an elevation of 3840 feet. The ridge top flat supports a flora including big sagebrush, yucca, prairie grasses, and juniper. Ponderosa pine is found on nearby slopes. The nearest source of water seems to be Squirrel Creek which is more than a mile to the south. The Pond Creek drainage, located to the north of the site, may support seasonal springs in the spring of the year but was dry as of mid-August.

As indicated by scattered lithic debris and other stone artifacts found on the surface, the site covers an area of about 75 by 40 yards. A possible fire hearth was noted at the site in an area where burrowing rodents had brought to the surface large pieces of charcoal. This suggested that some of the site is subsurface. Based on the various tool types found, the presence of pressure and percussion flakes, the variety of lithic material types, and the indication of a fire hearth, the High & Dry Site seemed to have been an occupation site. However, the "high and dry" location would seem to be an undesirable place for living at present as the area is far from a source of water and exposed to the elements, especially wind. A few ponderosa pines now grow at the site. Perhaps in the past there were more trees providing better protection -- as well as a source of fuel.

Material Collected. Artifacts recovered from the surface of the High & Dry Site included a side-notched projectile point of gray metamorphosed shale (Fig. 15:E) and the very base of what probably was a corner-notched point of dark metamorphosed shale (Fig. 15:D). Three end scrapers were found; one made of red jasper (Fig. 15:C), one of agatized wood (Fig. 15:B), and one of agate (Fig. 15:A). The bases of two knives and six other fragments of bifacially worked metamorphosed shale which may represent knives or blanks, complete the stone tool industry known from the site (Fig. 15:F,G,H,I,J,K,&L). The types of material being used for the manufacture of chipped stone tools during the time of occupation, as indicated by flakes, includes a predominance of red and gray metamorphosed shale; but also represented are igneous material, agate, and red jasper.

Recommendations. A test pit in the vicinity of the suspected hearth and more surface collection are recommended. Testing in other areas of the High & Dry Site may also prove

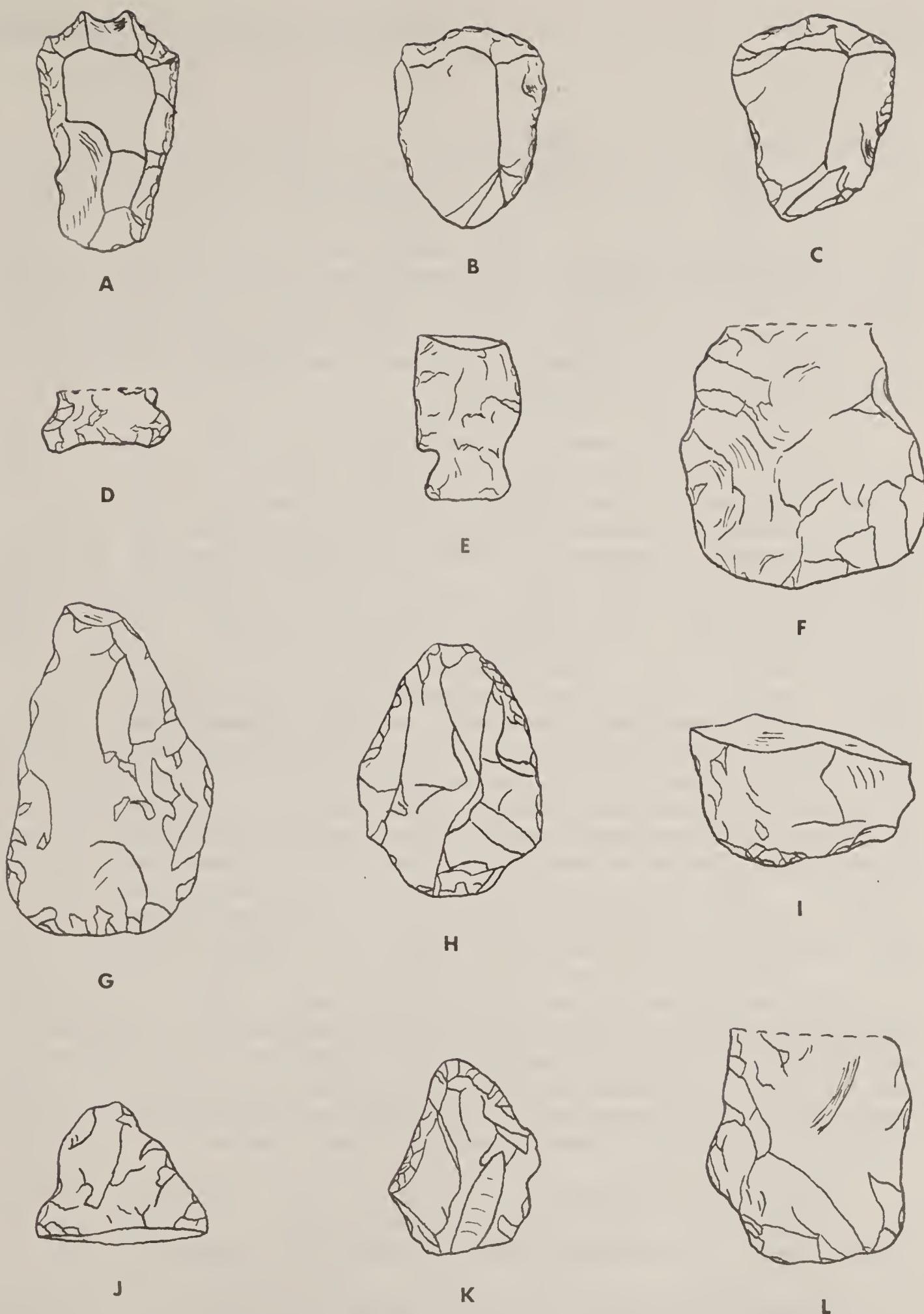


Fig. 15. Artifacts from the High & Dry Site (24BH1055).

worthwhile. The site should be photographed in black and white.

Quarry Knoll Site (24BH1056)

Location. NW 1/4 of SW 1/4 of Sec. 20, T9S, R40E

Site Description. The Quarry Knoll Site is located on a high, rocky ridge overlooking the lower Squirrel Creek valley which lies to the south and east. A modern elevation marker is located on the site indicating that this high point stands 3875 feet above sea level. The site area slopes downward to the north.

Numerous percussion flakes and the cores from which they were driven make up the lithic debris which is scattered over an area of approximately twenty-five square yards. Metamorphosed shale, ranging in color from red through gray outcrops naturally at this location and apparently provided the main attraction for the prehistoric inhabitants of this quarry site. Here, material was roughed out for later finishing into stone tools. As at several other quarry sites recorded during the 1972 survey, the lack or very small percentage of small, pressure retouch flakes and completed artifacts would suggest that the finishing touches were not put on stone tools at the quarry sites; but rather that blanks and suitable percussion flakes were carried away for later refinement. In addition to serving as a quarrying area, the location may also have been desirable as a vantage point for the surrounding country. The view is good of the lower Squirrel Creek valley to the southeast and of the country to the northeast which includes a portion of the Tongue River.

Big sagebrush provided the dominant floral cover at the Quarry Knoll Site, but fringed sagewort, snakeweed, and several prairie grasses were also present. Water is not available in the immediate vicinity of the site, the nearest observed source being Squirrel Creek which is about three-fourths mile south and 335 feet lower in elevation.

Material Collected. No tools were found at the Quarry Knoll Site. A lithic sample consisting of flakes and cores of red and gray metamorphosed shale was collected.

Recommendations. Further work does not seem warranted at the Quarry Knoll Site. A larger surface collection might reveal diagnostic artifacts which would provide some idea of the temporal dimension of the site. Black and white photos should be taken if the site is revisited.

Red & Gray Site (24BH1057)

Location. SE 1/4 of NE 1/4 of Sec. 34, T8S, R40E

Site Description. From a bluff on the west side of the Tongue River, the Red & Gray Site overlooks what is now the Tongue River Reservoir. Visible to the north is an area developed for modern camping. The site takes its name from the lithic debris of red, gray, and green igneous material which resulted from the use of this material in prehistoric stone knapping. This "obsidian-like" material apparently occurs naturally at the site, an area with many "clinker" formations. Several, small, unworked pieces of the stone were observed on the site, which suggested natural occurrence. None of these unworked pieces seemed large enough to be suitable for working into stone tools.

Small, pressure retouch flakes and a scraper found at the site indicated an occupation area. There are several possible tipi rings at the Red & Gray Site although the nature of the terrain, featuring many scattered chunks of "clinker", created problems in clear identification. The site covers an area of approximately 150 yards by 50 yards.

Skunkbush sumac is common around the "clinker" formations. Snakeweed, prairie grasses, and some sagebrush are also included in the present floral cover at the site. From the site there is a good view of the surrounding country and of the Tongue River valley just east of the site. The nearest available water would have been the Tongue River which could have been reached without too much inconvenience.

Material Collected. Artifacts from the Red & Gray Site included an end scraper of red igneous material (Fig. 16:A); a possible projectile point base (Fig. 16:C) and knife midsection (Fig. 16:B) of gray-green igneous material; and three thick, bifacially worked pieces of metamorphosed shale (Fig. 16:D,E,&F). Percussion flakes, retouch flakes, and cores found at the site were predominantly of the variously colored igneous material described in the site description. Gray and red metamorphosed shale and a few flakes of tan quartzite, pink chert, and clear agate were also present.

Four fragments of shell were found at the site. They are probably fresh water mussels gathered from the Tongue River. There was no evidence of intentional human work on these specimens. River mussels may have been an occasional part of the diet and/or the shells may have been used in making tools and ornaments.

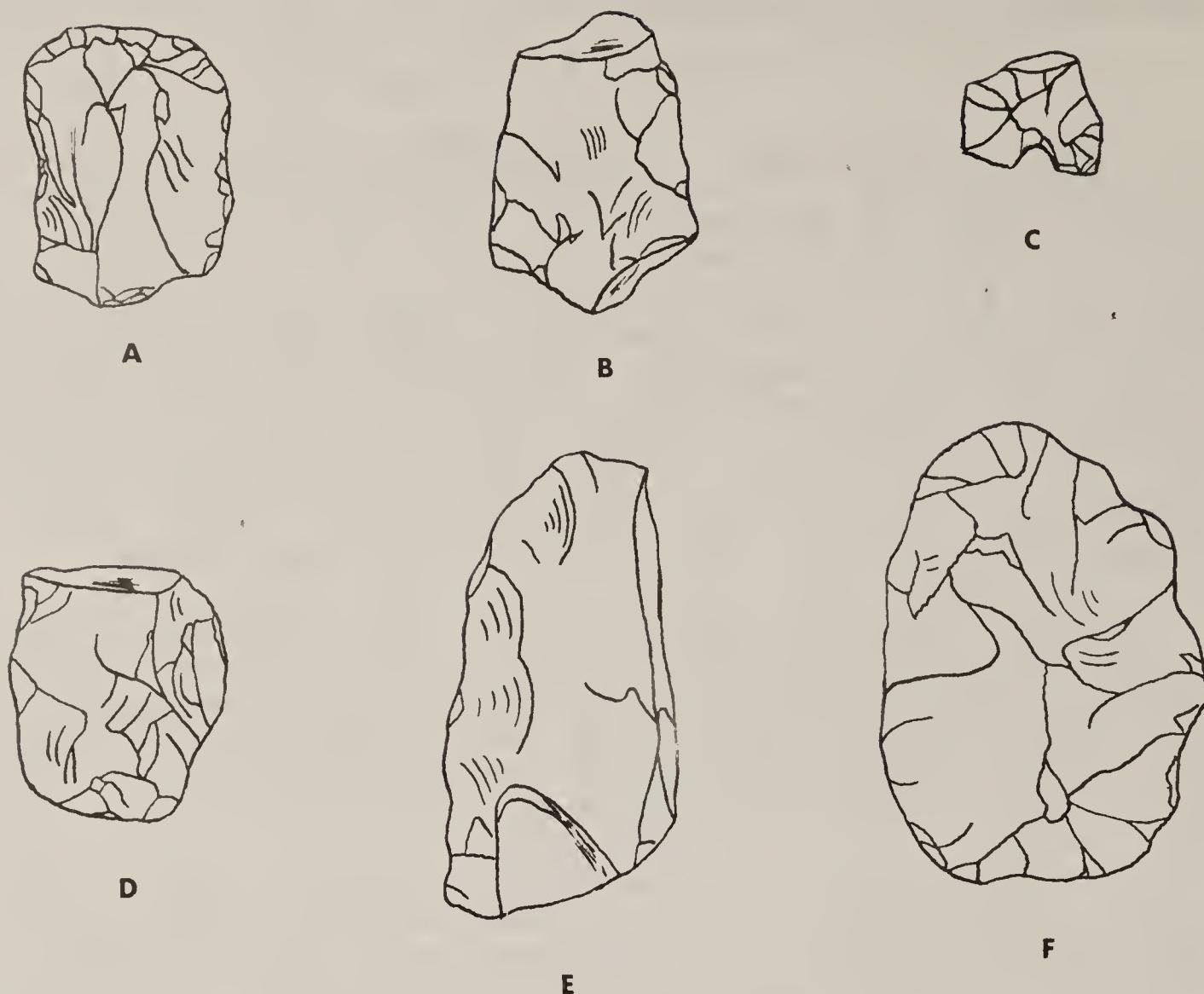


Fig. 16. Artifacts from the Red & Gray Site (24BH1057).

Recommendations. No further work is recommended for the Red & Gray Site. Diagnostic artifacts would be desirable, but the site seemed to have been heavily collected already, perhaps by visitors from the nearby modern camp-ground. The site seemed to be mostly surface, with little indication of significant subsurface material.

Few Pines Site (24BH1058)

Location. NE 1/4 of NW 1/4 of Sec. 23, T8S, R39E

Site Description. The Few Pines Site is located in a shallow recess on the first terrace along the south side of Spring Creek. The site area is protected by a higher terrace in back, and on two sides by higher portions of the same terrace on which the site rests. It is located about

five miles northwest of the juncture of Spring Creek and the South Fork of Spring Creek.

In the site area, there was scattered surface lithic debris in eroded areas and rodent workings. The area of the site was estimated at 40 by 30 yards. From surface indications, it appeared that the site extends to a depth of about one foot in undisturbed areas. Two small pieces of weathered bone that may relate to the occupation of the site were noted. Both percussion and retouch flakes were present at the site.

From the site location there is a good view of the adjacent Spring Creek valley but visual surveillance is limited in other directions. Access to the South Fork of Spring Creek valley is easily available from this site. As of mid-August, Spring Creek was dry in the vicinity of the site. Ponderosa pines grow along the ridge terrace just behind the site which, if present in the past, would have offered a source fuel. Vegetation at the Few Pines Site includes big sagebrush, snakeweed, prairie grasses, yucca, skunkbush sumac, juniper, and ponderosa pine.

Material Collected. A corner-notched, indented base projectile point of red metamorphosed shale (Fig. 17:A) seemed disproportionately thick and the base unusually large for its size, indicating that perhaps the blade area had been reworked. The characteristics of the base of this artifact seemed to be most reminiscent of the Duncan/Hanna types which may be assigned to Mulloy's Early Middle Prehistoric Period for the Northwestern Plains. A small knife of pink to white chert (Fig. 17:B), a large knife base of gray metamorphosed shale (Fig. 17:C), and a large, thick knife base of red metamorphosed shale (Fig. 17:D) were found on the surface of the site. The midsection of a small bifacially worked quartzite tool and a fragment of a cream colored chert tool were also recovered. Material types represented by flakes on the site included gray and red metamorphosed shale, some gray igneous material, and one flake which may be basalt.

Recommendations. The Few Pines Site should be tested if in danger of being disturbed by resource development. The site is neither large nor impressive. But much of the site may lie below the surface. Additional projectile points are needed to confirm the suggested temporal dimension of this site.

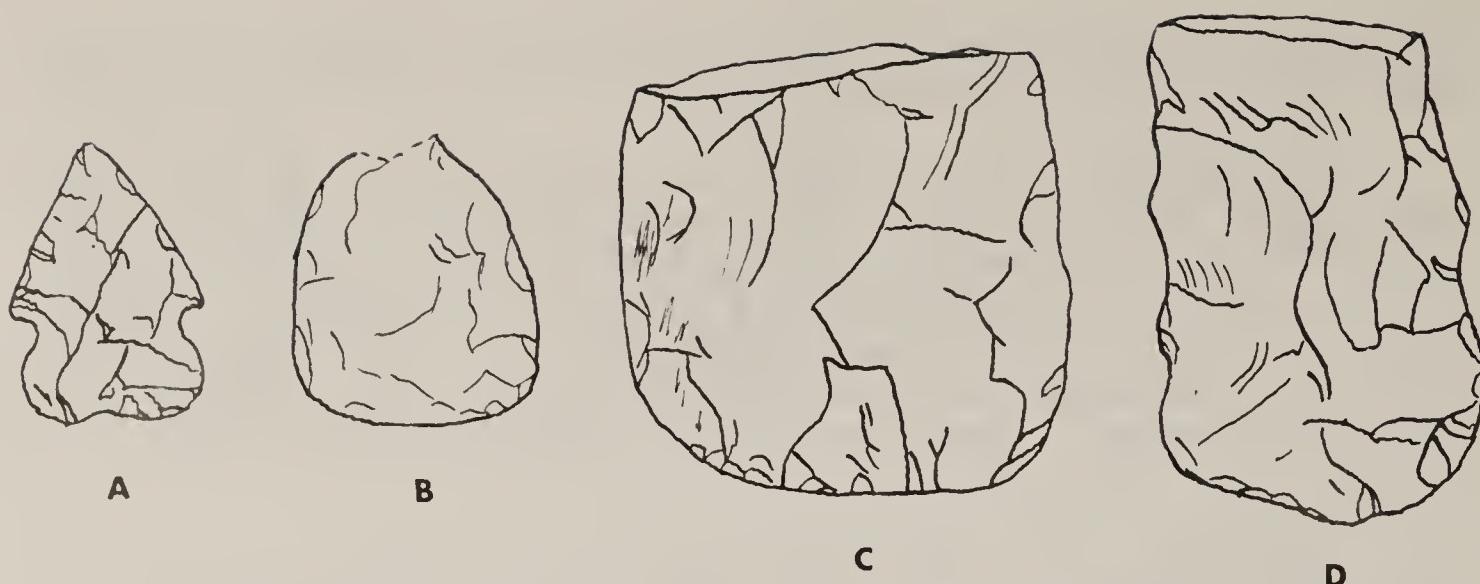


Fig. 17. Artifacts from the Few Pines Site (24BH1058).

Carbone Quarry (24BH1059)

Location. Center of E 1/2 of NW 1/4 of Sec. 22, T8S, R39E

Site Description. Rico Carbone, a local rancher, directed me to this site. His son Jerry, a member of the Sheridan Chapter of the Wyoming Archaeological Society, originally located the site. It is situated near the highest point along the ridge overlooking the Spring Creek valley south of the Carbone ranch. The reddish color just below the canyon rim along which the site is located is visible from the Spring Creek valley, a considerable distance away. Such color clues often indicate areas of metamorphosed shale outcroppings and may have aided prehistoric occupants in their search for materials from which to fashion stone tools.

This small site, about 15 by 15 yards, featured an extreme concentration of percussion flakes and cores of red and gray metamorphosed shale. The site appeared to be a small quarrying area where percussion techniques were used to strike off suitable flakes from pieces of naturally occurring metamorphosed shale. Large flakes or blanks were probably taken elsewhere for the completion of tool manufacture as no small pressure flakes were observed on the site. There was a shallow scrape on the hillside just below the canyon rim which may indicate an area where an attempt was made to expose subsurface stone (Jerry Carbone is to be credited with this observation). Compared to other known metamorphosed shale quarries in the Decker area, the Carbone Quarry was a site of only limited quarrying activity.

Flora in the vicinity of the site included thinly scattered ponderosa pine and juniper bushes on nearby slopes. Yucca, skunkbush sumac, big sagebrush, and blue-bunch wheatgrass characterize the ridge flat south of the site. Water is not available in the immediate vicinity.

Material Collected. A small sample of flakes and cores was collected from the surface at the Carbone Quarry. The naturally occurring material type at this site is metamorphosed shale ranging in color from gray through red. One flake of agate was the only non-local material noted at the site. No tools were found.

Recommendations. Further work is not recommended at this site.

Divide Site (24BH1060)

Location. Sw 1/4 of Sec. 18, T9S, R40E

Site Description. The Divide Site is located on a northwest-southeast ridge top which separates the Pond Creek and Squirrel Creek drainages. Elevation at the site is 3920 feet. Scattered lithic debris, primarily of gray and red metamorphosed shale, was spread along the ridge for a distance of approximately one-half mile. Confined to the ridge top, the site is about 50 yards in width. Metamorphosed shale seemed to occur naturally at locations along the ridge so it was easily accessable as a source of quarry material. Rough stone working and quarrying was attested to by the presence of many percussion flakes and cores of metamorphosed shale. However, that the site was also an occupation area is suggested by the presence of small, pressure retouch flakes, the variety of tool types, and rock structures, including tipi rings.

Because of the extent of the site, the presence of cobbles which may have been left with the intent of subsequent use, and the concentration of material here; repeated occupation on several occasions during the Late Middle Prehistoric Period is suggested. From the site there is a good view of the Squirrel Creek valley to the south and a fair overlook into the upper Pond Creek valley, but the view is limited in other directions. Some pine and juniper now grow on the site and prehistorically a similar flora may have provided fuel and wood for technological purposes. Other vegetation on the site included big sagebrush, snakeweed, and bunch grasses. The nearest water seemed to be Squirrel Creek, approximately one mile to the southwest, which is inconvenient considering the

distance and terrain. Many game trails were in evidence in the vicinity of the site where animals apparently take advantage of a natural break in the topography to pass between the Pond Creek valley and the Squirrel Creek area.

For purposes of recording and surface collection, the site was divided into three areas. Area 1 (to the west) included a scattering of flakes, projectile points, end scrapers, a knife, and several bifaces. Area 2 (located along the rim of the ridge overlooking the Squirrel Creek valley) seemed to be a chipping area as indicated by a concentration of flakes and cores of metamorphosed shale and three bifacially worked blanks. In Area 3 (at the eastern end of the site) there was a concentration of percussion and retouch flakes (among which was the greatest variety of material types at the site), a projectile point, an end scraper, a drill, several knives, smooth granite river cobbles, and rock structures.

Surface features in Area 3 of the Divide Site included three tipi rings. The area was naturally rocky and some structural rings may have gone undetected. Flakes were abundant around all rings and over the surface of the site in general. Ring 1 was 16 feet in diameter and had three central hearth stones. It was a double course ring of 51 stones that were fairly well sodded in except for the southern portion which was partly eroded. Ring 2 was 11 feet in diameter, showed no surface indication of a hearth, and appeared to have been disturbed. It was a double course ring of approximately 55 stones. Ring 3 was 11 feet in diameter, a double course ring with about 75 rocks being incorporated. Another rock structure of possible cultural significance was a semi-circular arrangement of large stones. It was approximately 15 feet in diameter, opens to the west, and basically seemed to be 9 large rocks that may have been intentionally arranged.

Material Collected. Artifacts from Area 1 of the Divide Site included the base of a corner-notched projectile point (Fig. 18:A); the base of what seemed to be a blank with the beginning of a corner-notch on one side (Fig. 18:B), both made of gray metamorphosed shale; a broken, corner-notched, dark red metamorphosed shale projectile point that may have been reworked to serve as a scraper (Fig. 18:C); two end scrapers of red jasper (Fig. 18:D&E); and four bifacially worked pieces of metamorphosed shale (Fig. 18:F,G,H,&I).

In Area 2 three pieces of bifacially worked gray metamorphosed shale that may have been blanks or preforms were found (Fig. 19:A,B,&C). The concentration of metamorphosed

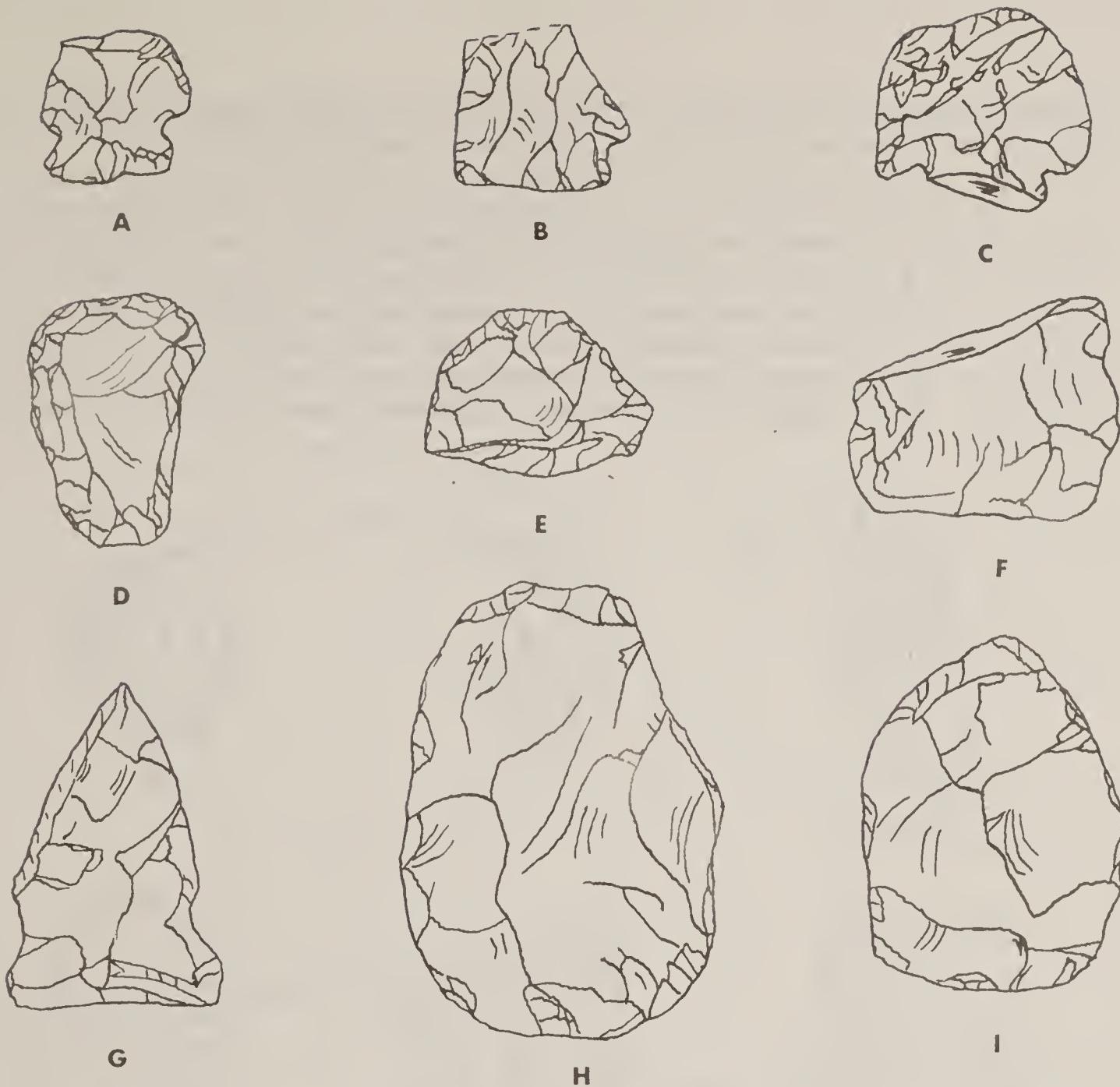


Fig. 18. Artifacts from the Divide Site (24BH1060). Area 1.

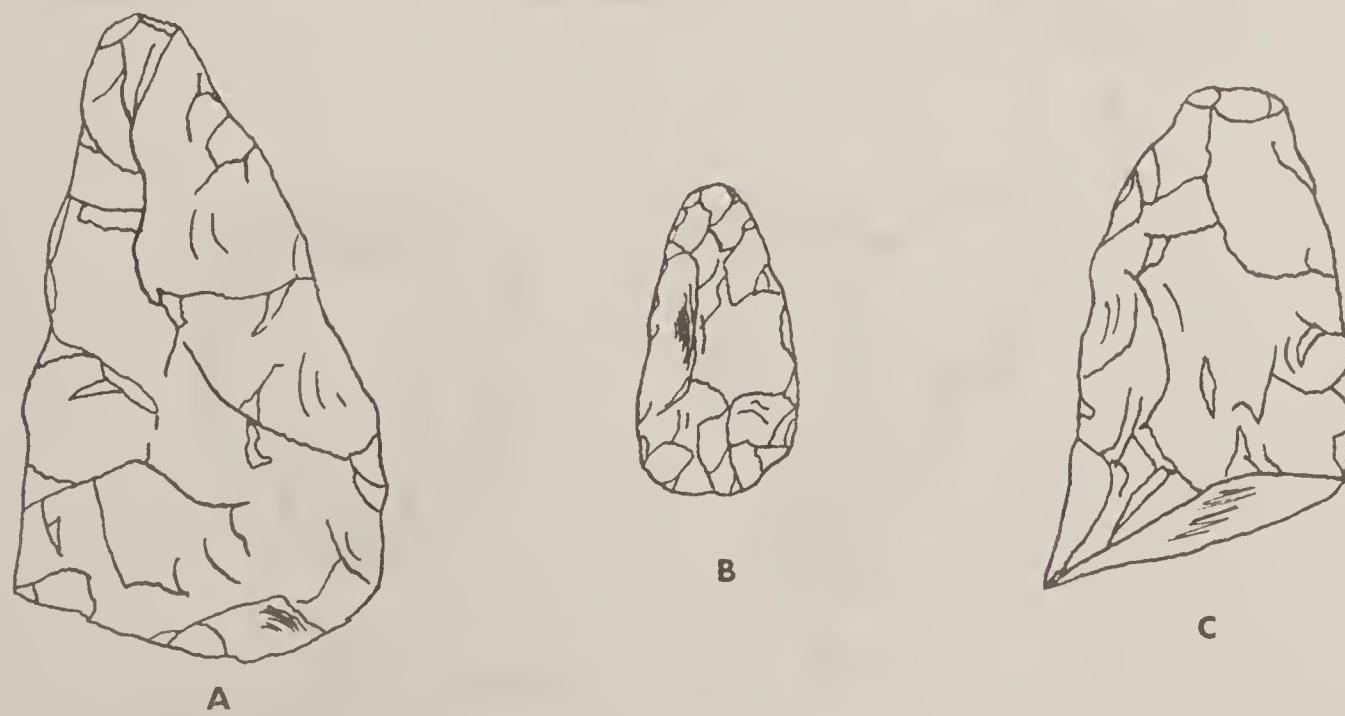


Fig. 19. Artifacts from the Divide Site (24BH1060). Area 2.

shale flakes and cores in Area 2 indicated that it was the location of considerable stone working activity.

In Area 3 a variety of artifacts were found on the surface: A corner-notched projectile point of reddish agate (Fig. 20:C); a drill or awl of dark metamorphosed shale (Fig. 20:G); an ovoid knife or red metamorphosed shale (Fig. 20:F); an end scraper of gray metamorphosed shale (Fig. 20:H); bases of two metamorphosed shale knives, (Fig. 20:D&E); and, portions of two unidentified artifacts (Fig. 20:A&B).

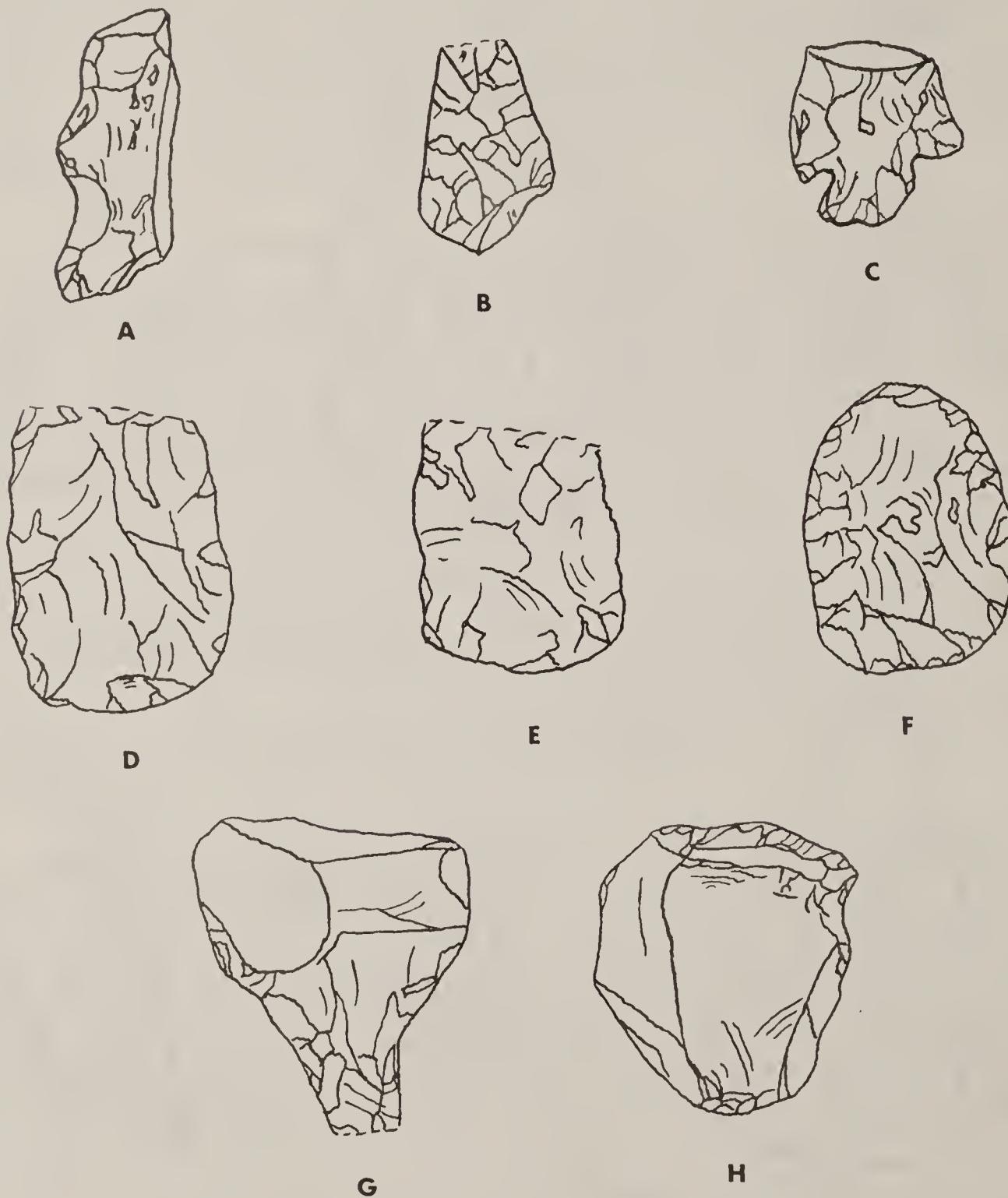


Fig. 20. Artifacts from the Divide Site (24BH1060). Area 3.

Two smooth river cobbles were found in close association in Area 3 of the site (Fig. 21:C&D). The smaller one shows some end battering; the larger cobble shows no obvious use wear but the suspected working edge feels somewhat roughened. The smaller cobble may have been used for pounding while the larger one seems well suited for use as an ax or chopper. These do not seem to be "edge ground cobbles" in that they lack the characteristic wear pattern and shape usually associated with edge ground cobbles. Two fragments of broken cobbles were also found (Fig. 21:A&B).

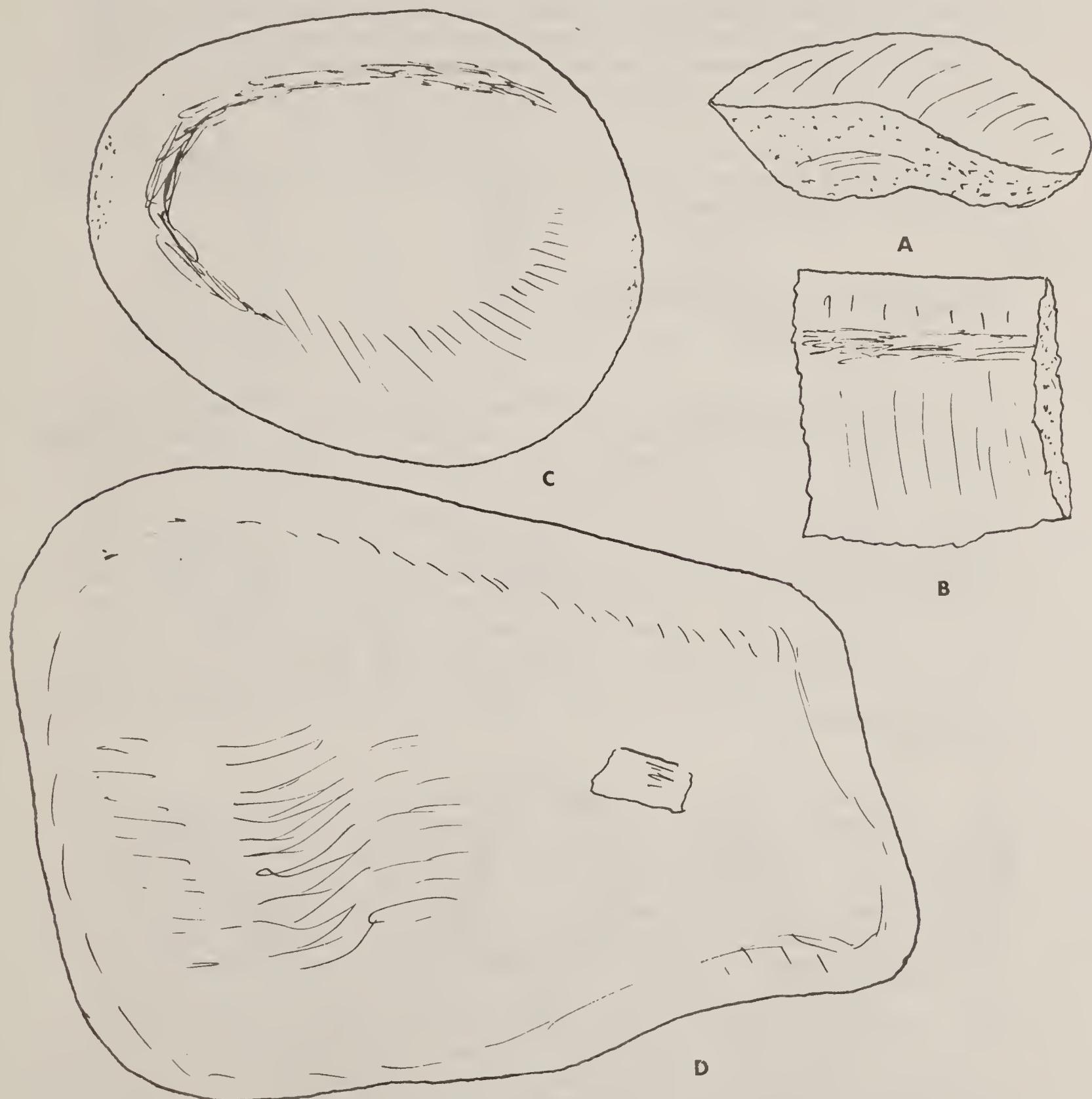


Fig. 21. Artifacts from the Divide Site (24BH1060). Area 3.

Material types represented in the flake sample from the Divide Site include metamorphosed shale, red jasper, igneous material, agate, and obsidian. Percussion flakes, pressure retouch flakes, and cores of gray, red, and dark red metamorphosed shale predominate in the sample.

The property owner reported having found "many" projectile points in this vicinity.

Recommendations. Further work is strongly recommended at this rather extensive site including test excavations at several locations. Even a more intensive surface collection would probably reveal additional artifacts which would be useful in interpretation of the Divide Site. The site, surface features, and surroundings need to be photographed in black and white. Much of the site seemed to be surface, but there may be buried cultural deposits as much as several inches below surface.

Pond Creek Site (24BH1061)

Location. NE 1/4 of SE 1/4 of Sec. 12, T9S, R39E

Site Description. The Pond Creek Site, a past occupation area, is situated on two adjacent tree covered knobs at the head of Pond Creek, and extends a short distance along a forested ridge to the south. Lithic debris scattered over the flats on top of the knobs covered an area approximately 200 yards by 40 yards. The location is in a naturally defensible position considering the trees and boulders around the edge of the mesa top. Higher ridges to the north, south, and west were lacking in tree cover. Thus the ponderosa pine at the site may have provided concealment with a view of the immediately surrounding country, protection from the elements, and a readily available source of fuel.

Vegetation on the knobs included ponderosa pine, juniper, skunkbush sumac, yucca, and prairie sand reedgrass. Although no diagnostic projectile points were recovered, the variety of stone material types and the tip fragment of what may have been a small projectile point lead to the impression that the site may have been occupied during the Late Prehistoric Period. If the site is post-horse in date -- ca. 1750 A.D. or later -- horse graze would have been available immediately east of the site on the Pond Creek valley floor with easy visual surveillance of the herd. In August 1972 Pond Creek was dry. Although the location of a water source in late summer is unknown, it is not conveniently located to the site. Perhaps the site was only

seasonally occupied when seasonal springs or snow served as a water source.

Material Collected. Artifacts found at the Pond Creek Site included a thin knife of gray metamorphosed shale (Fig. 22:A), the tip of a drill or stone awl of dark metamorphosed shale (Fig. 22:B), a side scraper of red metamorphosed shale (Fig. 22:C), two small tool tips of gray metamorphosed shale (Fig. 22:D&E), a knife base of gray metamorphosed shale (Fig. 22:F), a knife base of fine grained reddish-purple quartzite (Fig. 22:G), a red metamorphosed shale flake knife with bifacially retouched edges (Fig. 22:H), and a bifacially worked flake of dark metamorphosed shale (Fig. 22:I).

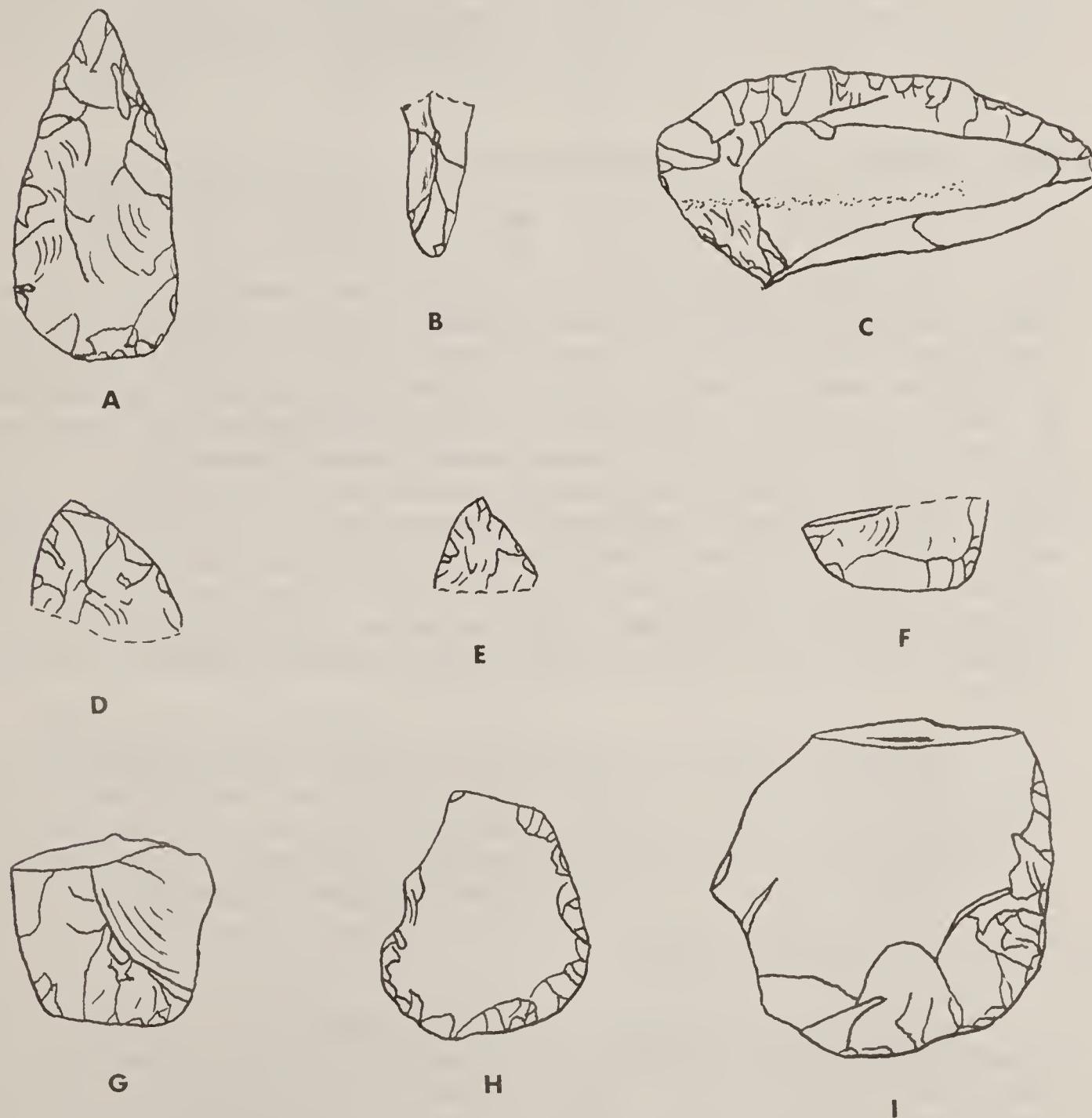


Fig. 22. Artifacts from the Pond Creek Site (24BH1061).

Percussion flakes, pressure retouch flakes, and a few cores of variously colored metamorphosed shale predominated in the lithic sample collected at the Pond Creek Site. Also present were flakes of gray, yellow, and red chert, red igneous material, brownish moss agate, and quartzite. A river cobble origin for the quartzite was indicated by one flake that showed the original cortex.

Recommendations. Testing is recommended if future resource development will affect the site. The sandy soil on the site was estimated to extend to a depth of several inches and may incorporate some subsurface cultural features. A few more tools, especially diagnostic projectile points, would greatly aid in the interpretation of the Pond Creek Site. The site had probably been surface collected by local residents prior to my 1972 recording of the site.

Miner Ranch Site (24BH1062)

Location. NW 1/4 of SW 1/4 of Sec. 33, T8S, R40E

Site Description. This site is located in the South Fork of Spring Creek valley near its confluence with Spring Creek and just east of the Miner Ranch. A thin scattering of flakes was noted along the ranch road and in the adjacent horse pasture. The area has been disturbed by recent road, reservoir, and spring improvement developments. It seemed likely that a small spring was natural in this vicinity. Some surface water was noted when the site was recorded in late August. A few flakes were found along the ridge north of the site. Jim Miner, a local rancher, reported that during the winter steam may be seen issuing from crevices along this ridge indicating underground burning of coal deposits.

From the ridge, there is a good view of the surrounding country, especially of the Spring Creek valley east to the Tongue River. The portion of the site on the valley floor is fairly well protected from the elements. Scattered pine and juniper are found on nearby slopes, especially in the broken hills south of the site. There are a few cottonwood trees along the stream.

Material Collected. No diagnostic artifacts were recovered from the surface of the site and no cultural features were observed. One fragment of a gray metamorphosed shale knife or biface (Fig. 23), a quartzite core, flakes of red and gray metamorphosed shale, and two flakes of igneous material are included in the lithic sample from the site.

Recommendations. No further work is recommended at the Miner Ranch Site. The thin and unconcentrated nature of the lithic debris, the recent disturbances indicated in the site description, and the fact that Jim Miner did not mention having found any artifacts in this vicinity justify the recommendation.



Fig. 23. Artifact from the Miner Ranch Site (24BH1062).

Slim's Rings Site (24BH1063)

Location. SE 1/4 of SE 1/4 of Sec 21, T7S, R39E

Site Description. Slim's Rings Site is located along a low ridge that is part of the first terrace above Rosebud Creek near the "Big Bend" area. At this Late Prehistoric Period occupation site 15 tipi rings are distributed in an east/west alignment along the ridge. The rings are concentrated, and more easily recognizable, in the eastern portion of the site. The tipi rings are formed of sandstone slabs which occur naturally at the edge of the terrace. There was one small rock pile near the eastern end of the site. Lithic debris was scattered along the terrace. A small, triangular projectile point was found at the western end of the site. Water, wood, edible berries, game animals, and horse graze would have been easily accessible in the Rosebud valley just below the site. From this location, there is a good view of the upper Rosebud drainage to the west but visibility is limited in all other directions.

Material Collected. One small, triangular, side-notched projectile point of dark red metamorphosed shale (Fig. 24), a fragment of a smooth river cobble, and flakes were found on the surface. The flake sample is composed mainly of metamorphosed shale, but also represented is a light colored chert. Both percussion and smaller retouch flakes are present.



Fig. 24. Artifact from Slim's Rings Site (24BH1063).

Recommendations. Elmer "Slim" Kobold, a rancher and long time resident in this area, showed me the site. There was not time to properly record and collect the site without causing him undue delay. A more accurate sketch map should

be drawn and more data concerning the tipi rings collected, including diameters, number of stones per ring, and presence or absence of hearths. Additional surface collection at the site should be conducted and black and white photos taken.

Munson Ranch Site (24BH1064)

Location. SW 1/4 of NE 1/4 of Sec. 22, T9S, R40E

Site Description. The Munson Ranch Site is situated on a flat along the west bank of the Tongue River south of the Tongue River Reservoir. Thinly scattered lithic debris was in evidence primarily along a ranch road that crosses the site. The area had been planted in pasture and was heavily overgrown at the time of recording which hampered surface collecting and field interpretation of the site. It probably was an occupation area. The site is located adjacent to the Tongue River and local resources such as water, wood, edible berries, and game animals attracted to the riverine setting would have been available. View of the surrounding country is limited. Mrs. Munson, a local resident, feels that there was a natural ford at this location that may have been used prehistorically. That the location may represent a traditional ford is supported by the fact that a county road bridge now crosses the river at the southern end of the site.

Material Collected. Mrs. Munson reported having found end scrapers, but no projectile points, at this site. I recovered no diagnostic artifacts. One broken purple chert flake showed unifacial edge retouching and may be part of an end scraper. Flakes of variously colored metamorphosed shale, quartzite, agate, and red jasper are included in the small lithic sample from the site. The sample consists mostly of small, pressure retouch flakes.



Fig. 25. Artifact from the Munson Ranch Site (24BH1064).

Recommendations. This site should be revisited for an additional surface collection if the surface becomes more open. The site apparently had been plowed prior to being planted in pasture which would have disturbed any cultural features near the surface. As there was nothing to suggest deep cultural deposits or use over an extensive period of time, testing would not appear to be worthwhile.

Three Forks Spring Site (24BH1065)

Location. SW 1/4 of SW 1/4 of Sec. 15, T9S, R39E

Site Description. The Three Forks Spring Site is located in the vicinity of a small spring near the head of a side canyon which runs into the Dry Creek valley. Flakes of stone were found scattered on the first terraces above the spring and, less noticeably, on the valley floor near the spring. The general setting and the presence of pressure retouch flakes indicated an occupation site. Water was easily available at the spring which was still flowing when the site was recorded in late August, 1972. Ponderosa pine, juniper, and a few deciduous trees were located in the vicinity of the site and, presumably, a similar flora would have provided wood for fuel and technological purposes to the prehistoric peoples who camped at this location. The area is fairly well protected from the elements. The view from the site is limited by higher ground in all directions except down the canyon to the east.

The first terrace above the spring is broken into a series of finger-like ridges by dry washes which enter the head of the canyon at this point. The three western-most of these terraces, nearest the spring, all had flake concentrations on them, perhaps indicating preferred stone working locations. Metamorphosed shale flakes predominated in all three areas, but the southern area also had a much higher number of red jasper flakes than seemed usual for sites in the Decker area. No cultural features, other than these flake concentrations, were observed on the surface of the site.

Material Collected. Because of the general setting, the spring, and the amount of stone working debris, this would seem to be a "good" site. Unfortunately, no diagnostic artifacts were recovered. However, the site probably had already been heavily collected. Recentcy in the area was indicated by development of the spring including stock watering tanks and construction of a rock wall.

Stone tools collected from the surface of the site include the midsection of what may have been a small, triangular projectile point (Fig. 26:A), but without the base style being represented this can only be regarded as speculation and not as a diagnostic artifact suggesting a Late Prehistoric Period occupation date for the site. Fragments of four bifacially worked stone tools (Fig. 26:B,C,&D) that may have been broken knives were found. All of these artifacts are of metamorphosed shale.

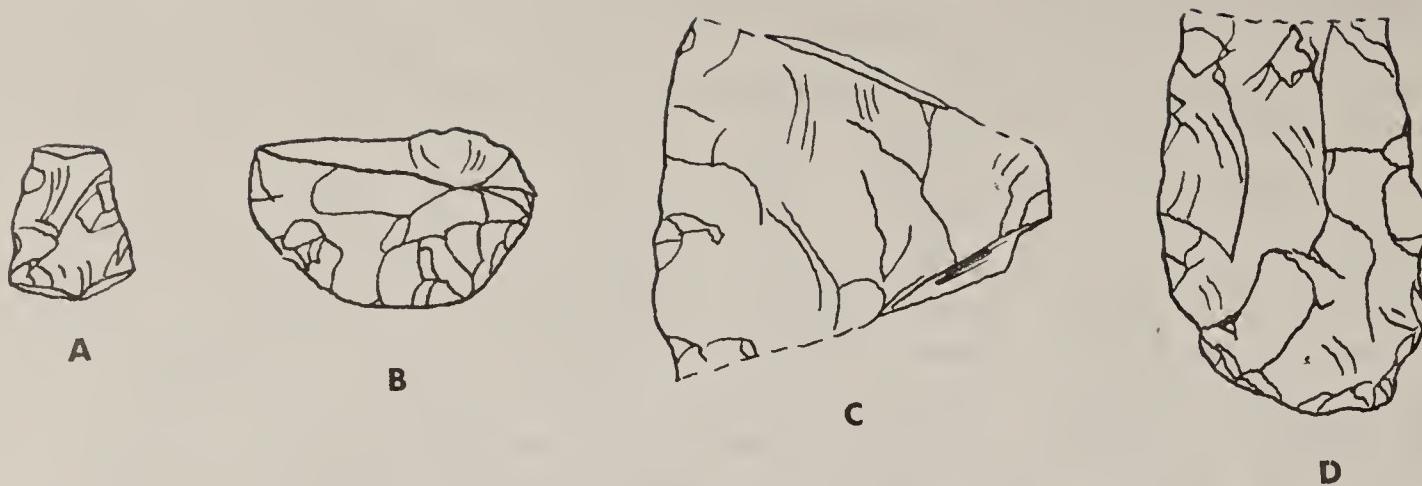


Fig. 26. Artifacts from the Three Forks Spring Site (24BH1065).

The lithic sample collected from the site includes flakes and cores mainly of gray and red metamorphosed shale but red jasper is also well represented.

Recommendations. The Three Forks Spring Site should be tested in the area of the valley floor just south of the spring, a likely location to reveal any cultural stratigraphy and/or subsurface material at the site. A few flakes were found on the surface in this area. It is suspected that cultural evidence at the site would stand a better chance of protection by soil deposition on the valley floor than on the more exposed first terraces. The valley floor near the spring at this site seemed more conducive to occupation than the valley floors around other springs in canyon heads of this region in that it offers a larger flat area for human activities.

More intensive surface collecting may reveal a few projectile points which are needed to confirm the suspected temporal dimension of the site, and photography should be accomplished.

I Don't Know Site (24BH1066)

Location. NW 1/4 of NE 1/4 of Sec. 22, T9S, R39E

Site Description. The I Don't Know Site is located along the rim of a side canyon leading into the Dry Creek valley. Thinly scattered flakes were recovered from eroded areas near the canyon rim and from nearby rodent workings. The area of the site is 20 by 40 yards. The site is situated in what seemed to be an unlikely location. There are no modern floral or geographic features to provide protection from the elements, the view of the prairie flat south of the site is limited by a higher ridge, and water

is not easily available. No cultural features were noted on the surface of the site.

Material Collected. No diagnostic artifacts were found when the site was located and recorded. A broken, bifacially worked tool of gray metamorphosed shale may have been a large knife. Two pieces of smaller, bifacially worked metamorphosed shale tools were also found. One thin flake of red metamorphosed shale had been retouched along one edge.

Some forty flakes of locally available metamorphosed shale ranging in color from gray through red to dark red, and one flake of tan quartzite comprise the lithic sample collected from the surface of the site.

Recommendations. No further work is recommended at the I Don't Know Site.

Canyon Rim Site (24BH1067)

Location. SW 1/4 of SE 1/4 of Sec. 27, T8S, R39E

Site Description. The Canyon Rim Site takes its name from the location along the rim of the southern edge of the ridge between the South Fork of Spring Creek and Pearson Creek overlooking the Pearson Creek valley. At present, ponderosa pine trees are found scattered along the canyon rim and on the slopes along the Pearson Creek drainage while the ridge top to the north of the site is covered by typical short grass prairie plants.

Surface indication of the site consisted of scattered lithic debris covering an area approximately 40 by 70 yards. Flake concentrations which may represent stone working locations were noted in two areas along the canyon rim; however, more erosion in these portions of the site might also explain this observation. The presence of pressure retouch flakes and stone tools indicative of varied activities suggested that this was an occupation site. For example, near the southern end of the site, two scrapers found in close proximity may indicate a hide working activity area. Located on top of a ridge, the site commands a good view of the surrounding country. The nearest modern source of water seemed to be a seasonal spring at the head of Pearson Creek several hundred yards west of the site.

Material Collected. Artifacts recovered from the surface of the Canyon Rim Site include one gray metamorphosed shale projectile point with narrow basal notches (Fig. 27:A),

the base of what was probably a corner-notched projectile point of gray metamorphosed shale (Fig. 27:B), one end scraper of gray metamorphosed shale (Fig. 27:C), one gray metamorphosed shale side scraper which may also have served as a spokeshave (Fig. 27:D), two possible end scrapers of metamorphosed shale (Fig. 27:F&G), one fragment of a broken river cobble (Fig. 27:E), twelve fragments of bi-facially worked pieces of gray and red metamorphosed shale, and a lithic sample collected from the site that includes mostly flakes and cores of gray through dark red metamorphosed shale. Represented in smaller numbers are flakes and cores of red jasper, red igneous material, and purple quartzite.

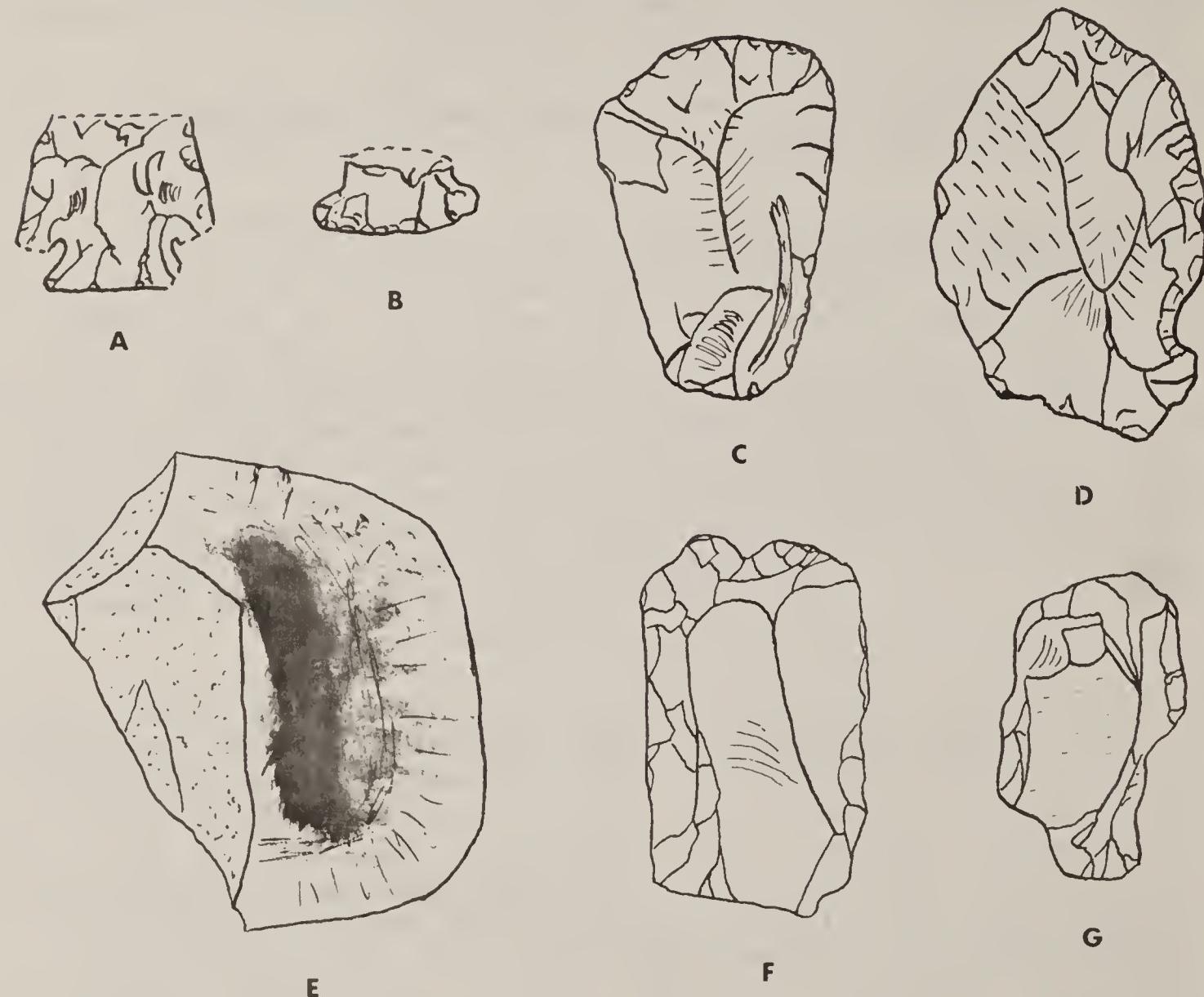


Fig. 27. Artifacts from the Canyon Rim Site (24BH1067).

Recommendations. The Canyon Rim Site should be tested in the area east of the rim, on the prairie flat, where the site is moderately covered by the growth of big sagebrush, prairie grasses, and forbs. Some flakes were recovered from the surface in this area, but it seemed likely that plant

growth and soil building have covered some portions of the site. An additional surface collection would probably yield more artifacts which would aid in the interpretation of prehistoric activities at the site. Black and white photos of the site and surroundings should be taken.

Boulders & Yucca Site (24BH1068)

Location. SE 1/4 of SW 1/4 of Sec. 26, T8S, R39E

Site Description. The Boulders & Yucca Site extends across the ridge separating the South Fork of Spring Creek and Pearson Creek. The ridge being rather narrow at this point, approximately 50 yards, the site location provides a good overview of the surrounding country in both drainages. Elevation at the site is 4100 feet. A north/south outcropping of brown sandstone boulders crosses the ridge in the area of the site. Some rather large ponderosa pines grow along this rock formation. These natural features may have provided some protection from the elements as an attraction for prehistoric occupation in this vicinity. Water, however, would not have been easily available at this location unless the site represents a winter occupation at which time snow may have been melted. There are no indications of nearby springs.

The site consists of scattered lithic debris extending over a 25 by 50 yard area. It appeared to have been an occupation site judging by the various tool types and the occurrence of both percussion and secondary retouch flakes. There was a concentration of metamorphosed shale flakes at the southern end of the site along the canyon rim overlooking the Pearson Creek valley. This may have been a workshop area while the craftsman also served as a lookout.

Material Collected. Stone tools recovered from the Boulders & Yucca Site include one corner-notched projectile point of red metamorphosed shale (Fig. 28:B), two end scrapers of red jasper (Fig. 28:C&D), a large quartzite scraper or chopper (Fig. 28:E), and eight fragments of bifacially worked blades of variously colored metamorphosed shale (Fig. 28:A). The end scrapers are interesting in that one shows a hinge fracture on the ventral surface which probably resulted from breakage during the use of this tool (Fig. 28:C). The other end scraper had been prepared on the thickest end of a rather thin flake. The quartzite scraper or chopper shows obvious use-smoothing on the ventral surface. This tool apparently was fashioned

from a river cobble since portions of the original cortex are intact.

The lithic sample from the site is dominated by flakes of gray through dark red metamorphosed shale that is locally available along certain ridge tops in the Decker area. Red jasper, represented by one flake, is the only other material type included in the sample of stone waste flakes.

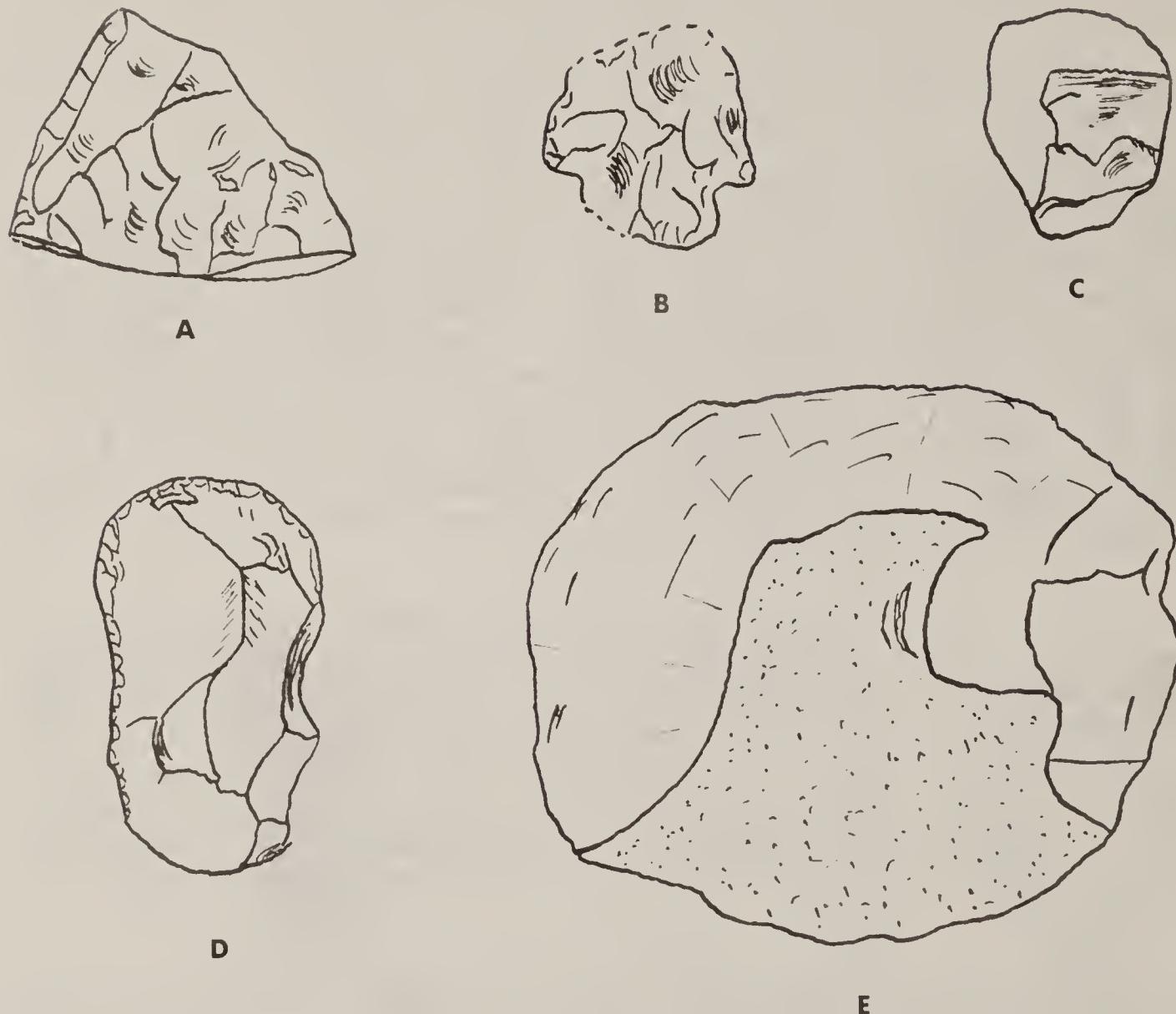


Fig. 28. Artifacts from the Boulders & Yucca Site (24BH1068).

Recommendations. Additional surface collecting, and testing in the area just east of the sandstone outcroppings are recommended for the Boulders & Yucca Site. Numerous flakes appeared in rodent workings east of the boulders indicating that part of the site may be subsurface in this area. Cultural deposits at the site were estimated to extend to a depth of several inches.

North-of-Camp Site (24BH1069)

Location. SE 1/4 of SW 1/4 of Sec. 24, T8S, R40E

Site Description. The North-of-Camp Site is located on a terrace overlooking what is now the Tongue River Reservoir. It is situated on the west side of the reservoir at an elevation of 3460 feet. The site consisted of a small area, approximately 20 by 40 yards, of thinly scattered lithic debris. Large percussion flakes of gray metamorphosed shale predominated on the site. Two quartzite river cobble cores were also collected. These later seemed to indicate that some quartzite for making stone tools was obtained locally from the Tongue River gravels. There should be more and better sites to confirm this observation. Most of the 1972 summer survey time was spent in areas some distance from the Tongue River proper and perhaps future survey work will be able to better inventory sites found in the Tongue River valley and on bordering terraces.

From the site there is a good view of the surrounding country. Water would have been easily accessible at the Tongue River. Present vegetation on the site includes big sagebrush, snakeweed, various prairie grasses, and forbs. Short grass prairie extends westward from the site.

Material Collected. No diagnostic artifacts were found. Material collected includes a core of red jasper, two quartzite river cobble cores and a sample of gray metamorphosed shale flakes.

Recommendations. No further work is recommended at the North-of-Camp Site.

CONCLUSION

Introduction

The concluding and interpretive section of this report is designed with several purposes in mind.

First, a general review of Northwestern Plains culture history will be presented. This brief summary will emphasize aspects of economies, social organization, and important cultural innovations which are featured in the some

12,000 years under consideration. The data from the Decker/Birney area is summarized as it contributes to the understanding of the lifeway of prehistoric inhabitants of the plains during the different phases of prehistory. Table 1, presented on page 73 of this report, summarizes the archaeological data from the Decker/Birney area in terms of types of sites recorded and their suggested temporal placement. The sites included on Table 1 are ones described in this report, those reported by Loendorf, Barnett, and Larson (1972), and sites reviewed in the "Previous Work in the Decker/Birney Area" section of this report.

Mulloy's chronology as presented in A Preliminary Historical Outline for the Northwestern Plains (1958) will serve to structure this review. Many sites in southern Montana, northern Wyoming, and western Nebraska indicate the validity and utility of this general chronology. Some of these include Pictograph Cave, Signal Butte, Birdshead Cave, Ash Hollow Cave, the Billings Bison Trap, the McKean Site (Mulloy 1954:64), Wedding of the Waters Cave (Frison 1962), the Bentzen-Kaufmann Cave Site (Gray 1962), and Horned Owl Cave (Gebhard, Agogino, and Haynes 1964). These strongly suggest that Mulloy's chronology will adequately serve to organize the data from the Decker/Birney area. All of the diagnostic artifacts that were found in the vicinity of Decker seem to fit comfortably into Mulloy's culture period outline and are similar to the materials recovered from the aforesaid sites.

Secondly, a discussion of site distribution in the Decker/Birney area will be presented on the basis of preliminary work in the area. Although my sample is small, there seems to be an indication that settlement patterns in the Decker area, and perhaps elsewhere on the plains as well, changed significantly between the Late Middle Prehistoric and Late Prehistoric Period cultural adaptations. This change is defined and several suggestions as to why are offered as hypotheses which need to be further tested.

Finally, summary recommendations concerning archaeological research in the Decker/Birney area are presented.

Review of Northwestern Plains Culture History

Early Prehistoric Period 11,000 B.C.-4,000 B.C.. The Clovis, or Llano, Culture is the earliest well defined human occupation recognized in the New World at present. A series of Carbon-14 dates, primarily from sites in the southwestern United States, indicate a date in the neighborhood of

9,000 B.C. for Clovis material (Gorman 1972:206). The Clovis projectile point is rather distinctive. It is a lanceolate point with a concave base from which a few large flakes have been removed from the basal region to produce a flute. They are most often some three to five inches in length and the basal portion of the point is usually ground smooth (Wormington 1957:263). Clovis projectile points have been found at several sites in association with the extinct mammoth.

Clovis projectile points have been found at several archaeological sites in Montana. No reports of Clovis finds within the Decker/Birney area are known to me. George Arthur (1966:95) reports a possible Clovis point from Carbon County which adjoins Big Horn County to the west.

Folsom, dating to about 8,500 B.C. (Wormington and Forbis 1965:15-20), follows Clovis. The distinctive Folsom fluted point is generally somewhat smaller and better made than the Clovis point. Folsom points average around two inches in length, are examples of excellent workmanship, are lanceolate in outline, and are characterized by the removal of a large fluting flake which covers most of the blade (Wormington 1957:263). Folsom points have been found on the plains from the American Southwest to Canada. Folsom points have been found with an extinct species of bison, Bison antiquus.

As with Clovis, I know of no Folsom artifacts from the Decker/Birney vicinity although their presence is certainly a possibility. At the MacHaffie Site near Helena, Montana, Richard Forbis excavated Folsom material which was overlain with deposits containing later Plano artifacts (Forbis 1955).

The Plano Cultures, still within the Early Prehistoric Period, follow the Folsom people in time. Dates for the Plano run from approximately 8,000 B.C. through 4,000 B.C. A variety of distinctive projectile points have been recognized to date from the later portion of the Early Prehistoric Period. At the previously mentioned MacHaffie Site, Forbis found a layer containing Scottsbluff points. Scottsbluff and Eden points were found at the Horner Site near Cody, Wyoming. At this large site the remains of many butchered bison were found, but the animals have not been identified as to species (Wormington 1957:127). Eden projectile points may be described as long, narrow, stemmed points which tend to be diamond-shaped in cross section. Flaking is very well done and they somewhat resemble Scottsbluff points (Wormington 1957:267).

Fredlund (1972) found an Eden type projectile point near the mouth of Pond Creek which is just north of Decker, Montana. The fact that this point was made from red metamorphosed shale suggests that the "Paleo-Indians" had some familiarity with this general region and its resources. It seems likely that some of the extensive metamorphosed shale quarries in the Decker/Birney area, such as the Dry Creek Quarry (Loendorf, Barnett, and Larson 1972:69-71), had been intermittently used for thousands of years. Hopefully, occupation sites and additional artifacts of Early Prehistoric age will be found in the course of future archaeological research in the Tongue River area.

The Early Prehistoric Period thus encompasses the cultures of the earliest known inhabitants of the New World. The archaeological evidence suggests groups of nomadic hunters. The earliest of these hunters, the Clovis people, sought post-Pleistocene megafauna. The mammoth must have been a formidable prey and once killed provided a large quantity of meat. Frederick Gorman (1972) suggests and tends to support a hypothesis as to how a number of small seasonally isolated groups may have maintained relationships for the purpose of forming "task-specific hunting groups" at certain times of the year. This special hunting group would then specifically pursue big game animals, perhaps seasonally, which would be less feasible at other times during the year when social groups of fewer adult males and their families engaged in other subsistence activities. The Clovis people also hunted smaller animals including tapir, now extinct bison, and possibly an extinct species of horse (Wormington 1957:56), and probably made some use of floral resources as well although I know of no direct archaeological evidence for this latter suggestion.

Probably related to the waning and eventual extinction of the mammoth, the Folsom people turned attention to the bison in their economy. The bones of extinct bison and camel species have been found at Folsom sites (Wormington 1957:34). In the Folsom level at the MacLaffie Site in Montana, Forbis found the bones of an unidentified species of bison as well as deer, wolf, and rabbit. Again, small groups subsisting primarily through the hunt is suggested with perhaps some gathering of plant foods as well. Mulloy (1952:126) writes, "The picture is one of small groups of nomadic hunters. The few grinding tools and the excellence of the projectile points suggests an emphasis on hunting rather than gathering."

Plano projectile points have been found at sites associated with another extinct form of bison, Bison occidentalis (Mulloy 1958:206). At the MacLaffie Site, animal

bone from the Scottsbluff level included antelope and rabbit in addition to bison (Wormington 1957:122). Hunting throughout the Early Prehistoric Period relied on the dart and spear thrower, or atlatl. The projectile points that have been described were fastened to a dart or spear which was thrown with the aid of a throwing board. The bow and arrow does not make its appearance until several thousand years later. The types of dwellings in use during the Early Prehistoric Period are not known. Fire, as indicated by hearths has been a part of cultural traditions in North America since Clovis times. Other stone tools used by these Early Prehistoric Cultures include knives, scrapers, choppers, retouched flakes, and gravers.

Early Middle Prehistoric Period 4,000 B.C.-A.D. 1. The Early Middle Prehistoric Period is recognized by a series of diagnostic projectile point types including McKean, Duncan, and Hanna points. (These are described in the "Cultural Chronology of the Decker/Birney Area" section of this report.) The McKean point, being lanceolate in outline with a concave base, is reminiscent of some types characteristic of the Early Prehistoric Period but is generally less well made. The Duncan and Hanna points are sometimes viewed as variants of (Mulloy 1954) or as distinct from (Wheeler 1954) the McKean point.

Mulloy (1958:209) characterized the stone tool industry of the Early Middle Prehistoric Period as including scrapers, choppers, drills, retouched flakes, gravers, and manos and metates in addition to projectile points. The bone industry includes bone awls, knapping tools, beads, and game counters (Mulloy 1958:209). Mulloy suggests that the manos and metates found on sites of this age indicate an increased emphasis on the gathering of wild plant foods and less use of large game animals, especially the bison. This may have been more true in the area to the west, while the hunting of modern bison (*Bison bison*) was central to the economy in the east (Mulloy 1958:209). At present, data from the Decker/Birney area seems to indicate an importance placed on hunting in the subsistence economy. Other authors (Davis 1968:48), (Kehoe and Kehoe 1968:27), (Forbis 1968:40), and (Wedel 1956:92 and 1963:3) have argued that bison seems to be of continuing importance in prehistoric economies from the Middle Period through the Late Period in areas to the north and east of the Decker/Birney area including northern Montana, Saskatchewan, and Alberta. Level II of the Kobold Site (Frison 1970:26) and the Powers-Yonkee Site (Bentzen 1966) are both Early Middle Prehistoric Period bison kill sites in the Decker/Birney vicinity. Additional data from occupation sites dating to this period are needed to further assess subsistence activities in the Decker/Birney area.

Only two occupation sites recorded in the Decker/Birney area thus far, the Few Pines Site and the Decker Hearth Site, may date to the Early Middle Prehistoric Period, but in both cases the placement of the sites to that time is questionable. Neither site is of much interpretive value. Of the local residents with whom I talked, only Claris Foss mentioned having found a grinding stone in the area. I did not observe any grinding stones in the few local collections that I had a chance to examine, but this kind of artifact may be easily overlooked or ignored by many collectors. Clearly, the assessment of Early Middle Prehistoric Period economy in the Decker/Birney area must await additional archaeological field work.

Mulloy (1958:209) suggests the social organization of people of the Early Middle Prehistoric Period as being "... small bands of nomads living in caves or in perishable shelters in the open."

Late Middle Prehistoric Period A.D. 1-A.D. 500. Projectile points characteristic of the Late Middle Prehistoric Period are of corner-notched types and are generally somewhat smaller than points from the preceding periods. The spear thrower and dart were apparently still in use during this cultural period. At the Wedding of the Waters Cave, Frison (1962:252) reports, "The wooden material from Level II suggested a group using the atlatl rather than the bow and arrow. ... A corner notched projectile point is bound in place in a wooden foreshaft with a sinew binding." Level II at this site dates to the Late Middle Prehistoric Period. Edge ground cobbles, perhaps used in hide tanning, and tipi rings are known to date to the Late Middle Period (Mulloy 1958).

"Most of the sites of this period are characterized by a relative poverty of artifacts (Mulloy 1958:209)." This observation agrees with the data for the Late Middle Prehistoric Period occupation sites in the Decker/Birney area. The sites are usually small, and in terms of artifacts typically yielded only a projectile point or two, a few scrapers, and knives or bifaces. Two fairly extensive occupation sites in the Decker/Birney area dating to this period, the Divide Site and the Pearson Creek Site, may have been used intermittently on several occasions during Late Middle Prehistoric times. The Late Middle Period occupation sites in the Decker/Birney area are usually located along ridge tops at relatively high elevations. The possible significance of the Late Middle Prehistoric Period and Late Prehistoric Period settlement patterns in the Decker/Birney area will be considered following this general review of plains culture history.

Concerning the Late Middle Prehistoric Period, Mulloy writes, "In the westerly sites the vegetable gathering orientation is if anything, intensified with reflections in artifacts of smaller numbers of projectile points and hide working tools and an increase in numbers of manos and metates (1958:209-210)."; and "Animal bones are usually scarce and the larger forms absent (1958:210)." In the Shoshoni Basin of Wyoming, Mulloy (1954:59) noted that "The emphasis on manos and metates and paucity of hide working tools and projectile points and animal bones suggests a mixed hunting and gathering economy strongly oriented towards gathered vegetable products and small rodent-sized animals in which large game figured only slightly." Also present at the Shoshoni Basin sites of Late Middle Prehistoric Period age were numerous rock filled hearths which may have been used for roasting vegetable products (Mulloy 1954:59).

This apparent emphasis on gathering of vegetable products in the economy of the Late Middle Prehistoric Period sites in the western portion of the plains, such as in the Shoshoni Basin of Wyoming; may be due to diffusional or migrational influences from the Great Basin while the easterly plains maintained an emphasis on bison hunting (Mulloy 1954:59 and 1958:210). As evidence of easterly sites practicing a bison hunting economy, Mulloy cites the Billings Bison Trap, Pictograph Cave II, and Signal Butte II. These sites are distributed both west and east of the Decker/Birney area so apparently the survey area being reported here would fall within Mulloy's easterly region for the Late Middle Prehistoric Period which maintained an emphasis on bison in the economy. Concerning this variant of the Middle Period, Mulloy (1952:127) suggests a lifeway of "... restricted nomadism based upon the habits of game animals." An emphasis on bison in the Late Middle Prehistoric Period economy fits my preliminary interpretation for the Decker/Birney area. Bison were being hunted by several communal techniques. That buffalo jumping was practiced is indicated by Level III of the Kobold Site (Frison 1970) and impounding is indicated at the Ruby Site in the Powder River Basin of Wyoming (Frison 1971). At Late Middle Prehistoric Period occupation sites investigated in the Decker/Birney area, lithic industries featuring a few projectile points, scrapers, and knives are characteristic which seem to indicate hunting was important in the economy. No manos and metates were found. Also, the high locations of occupation sites with a good view of the surrounding country seem to me to suggest an economy oriented towards hunting. At present, no particularly useful plants grow along the ridge tops. Psorelea spp. (perhaps Indian Breadroot but not positively identified) now grows on the prairie flats behind and below these ridges.

The predominance of metamorphosed shale in the lithic debris at sites datable to the Late Middle Prehistoric Period indicates that these occupants were familiar with the quarry resources in the Decker/Birney area. Mulloy (1958:213) writes, "Altogether the evidence from the Late Middle Prehistoric Period suggests again small groups of nomadic people who sometimes lived in caves but more often occupied open camp sites with perishable shelters." The Divide Site is the only Late Middle Period occupation site at which tipi rings were observed and no truly accommodating and attractive rock shelters are yet on record from the Decker/Birney area.

Late Prehistoric Period A.D. 500-A.D. 1800. Mulloy (1958:213) portrays the Late Prehistoric Period in the following terms, "In general the Late Prehistoric Period is characterized by increases in numbers and size of sites and by greater variety of material culture including introduction of ceramics ...". Pottery in southeastern Montana is generally assignable to one of two traditions; Intermountain or Mandan-Hidatsa. It has been suggested that Intermountain pottery is attributable to the proto-historic Shoshoni and that the impetus for the Mandan-Hidatsa tradition came from the earth lodge villages along the Missouri River in what is now North Dakota. Evidence for both of these pottery traditions was found in Empty Gulch below Pictograph Cave with the Mandan-Hidatsa tradition accounting for about ninety percent of the sherds recovered (Mulloy 1958:82-84). I did not find pottery on the surface of any of the Late Prehistoric sites I recorded during the summer of 1972. Carbone (1972:32) reports the presence of pottery in the Tongue River drainage which is suggested to be early Crow. This identification indicates that this ware is of the Mandan-Hidatsa tradition. I would expect pottery of the Mandan-Hidatsa tradition to predominate in the Tongue River area in view of archaeological evidence as suggested by its predominance at Pictograph Cave, and in view of ethnohistorical accounts as indicated by Francois Antoine Larocque's accompanying a Crow band through the Tongue and Powder River country in 1804 (Hazlitt 1934:13).

The use of several types of dwellings is indicated for the Late Prehistoric Period. The well known plains Indian tipi was probably the most commonly used abode. When available, it seems that rocks were often placed around the edges of tipis to help anchor the hide cover and when the tipi was taken down the rocks were left thus resulting in the well known "tipi ring". Several authors have argued that not all stone rings found on the plains represent locations where tipis were erected but it seems likely that this is an explanation for many of them. Tipi ring sites

in the Decker/Birney area that I feel represent Late Prehistoric Period occupation sites include Slim's Rings Site, Jess' Eagle Trap Site, Hellish Deerfly Site, and possibly the Little Elk Tipi Rings. The cribbed log structure is another type of dwelling assignable to the Late Prehistoric Period. One of these, the Gone From the Wind Site, is known from the Decker/Birney area. Wikiups, conical-shaped structures of poles arranged in tipi-like fashion, also date to the Late Prehistoric and Historic Periods. These may often have been constructed as war lodges by the plains tribes (Kidwell 1969:18). No wikiup sites were recorded in the survey, but their presence near the headwaters of the Tongue River in the Big Horn Mountains of Wyoming is documented by Carbone (1972). Rock shelters, such as Pictograph Cave, were utilized during Late Prehistoric times. A late, triangular, tri-notched projectile point was found on the surface in a small rock shelter at the 21 Ranch Site. This small shelter hardly seems conducive to human occupation; rather, people were probably camping in the adjacent Squirrel Creek valley.

The introduction of the bow and arrow onto the Northwestern Plains early in the Late Prehistoric Period probably had an effect on the hunting economy. With the advent of the bow and arrow came smaller projectile points. Arthur (1966:176) writes,

Early in the Late Prehistoric Period, the transition from atlatl and spear to bow and arrow is suggested by the larger Besant points, dated at A.D. 377 ± 325 (Wettlaufer, Meyer-Oakes, et, al. 1960) associated with bison kills (Arthur 1962; Davis and Stallcup 1965), stratigraphically followed by the small distinctive Avonlea points dated at A.D. 460 (Kehoe and McCorquodale 1961) which are very similar in size and shape to the very late side-notched points used on arrows.

The bison remained a very important animal in the plains economy. "In the Northwestern Plains and in the intermountain Rockies of southern Montana, perhaps the most significant advance of the Late Prehistoric Period was the buffalo jump. Although evidence may place their beginning earlier in time, it was during the Late Prehistoric Period that buffalo jumps reached their peak of development and use (Arthur 1966:175)." Communal hunting techniques for bison provided great quantities of meat to be processed and may have traditionally been autumn events in which several social groups came together in a co-operative effort to prepare for the winter months (Frison 1971). Late Prehistoric Period bison jumps reported from the

Decker/Birney area include Level IV of the Kobold Site (Frison 1970), the Foss Thomas Site (Fry 1971), and possibly the South Fork Jump. Additional archaeological survey work and the following out of site leads from local residents will undoubtedly reveal more sites of this type in the area.

No evidence for the successful practice of subsistence horticulture by prehistoric inhabitants of the Northwestern Plains has been presented. Sometime during the Late Prehistoric Period, a trade network developed between the nomadic hunters of the Northwestern Plains and the semi-sedentary earth lodge villages which became established along the Missouri River in what is now North and South Dakota. The aboriginal pattern of trade probably featured foodstuffs; the people of the earth lodge villages trading products from their river valley gardens, including corn, to the hunters from the west in exchange for items such as dried meat, pemmican, and animal hides (Ewers 1954). Thus throughout prehistoric times the cultural adaptation to the Northwestern Plains remained a nomadic lifeway dependent on hunting and gathering; archaeologically characterized by relatively small camp sites of brief occupation.

The Northwestern Plains, perhaps partly because of an increasing bison population (Mulloy 1958:214), attracted influxes of people from the east. In some cases, the well documented situation of the Crow for example (McGinnis and Sharrock 1972:4-5 and Lowie 1935:xiv), these groups gave up a horticultural way of life with at least semi-permanent villages to the east to become nomads of the plains. Historically known tribes which apparently moved onto the Northwestern Plains during the Late Prehistoric Period include the Crow, Cheyenne, Sioux, Assiniboine, and Blackfoot (Mulloy 1958).

Late in the Late Prehistoric Period, sometime about A.D. 1750, the introduction of the horse to the Northwestern Plains greatly increased the mobility of the previously pedestrian nomads. Before the appearance of the horse; the dog, fitted with a travois, provided the only beast of burden available to the wandering inhabitants of the Great Plains. The gun, arriving from the east, appeared on the Northwestern Plains at about the same time as did the horse. The bow and arrow, however, remained the most popular and effective weapon for the hunting of bison which now took the form of a chase or surround by hunters mounted on horseback.

Archaeological sites in the Decker/Birney area provide additional insights into the way of life of the Late

TABLE 1

TYPES OF SITES IN THE DECKER/BIRNEY AREA AND THEIR SUGGESTED TEMPORAL PLACEMENT

	EARLY PREHISTORIC 11-4000B.C.	EARLY MIDDLE PREHISTORIC 4000B.C.-A.D.1	LATE MIDDLE PREHISTORIC A.D. 1 - A.D. 500	LATE PREHISTORIC AND HISTORIC A.D. 500 - A.D. 1890	UNASSIGNED
Occupation sites	MISCELLANEOUS FIND. EDEN VALLEY POINT	FEW PINES SITE? DECKER HORNIN SITE?	PEARSON CREEK SITE PRAIRIE SPRING SITE HIGH & DRY SITE DIVIDE SITE CANYON RIM SITE BOULDERS & YUCCA SITE POINT SITE GAS GULCH SITE WOUNDED DOVE SITE LANDING STRIP SITE PEARSON TERRACE?	SOUTH FORK BOTTOM SITE 21 RANCH SITE REOF GRAY SITE? POND CREEK SITE? MUNSON RANCH SITE? THREE FORKS SPRING SITE? COX FORTIFICATION ARROWHEAD ROCKS	BOULDER SPRING SITE SHORT STAY SITE FEW FLAKES SITE MINER RANCH SITE I DON'T KNOW SITE ROCKY REST SITE BIRD OVERLOOK DEAD PINE SITE WINDMILL SITE LITTLE CACTUS SITE ABOVE THE ROAD SITE TERRACED RIDGE SITE THREE DEER SITE HOMESTEADER'S BACKBONE BACKBONE VIEW SITE MUGGY DAY SITE SANDY MESA SITE FANCY GATE SITE SMALL SPRING SITE RATTLESNAKE ROCKHOUSE STANDING ROCK LOOKOUT MONUMENT CREEK OVERLOOK DECKER SPRING SITE BROKEN BONE CANYON CREEK SITE COLUMBUS WORKSHOP
TIPI RINGS				SLIM'S KINGS SITE JESS' EAGLE TRAP SITE HELLISH DEERFLY SITE? LITTLE ELK TIPI RINGS?	
BISON KILL SITES		KOBOLD SITE II POWERS-YONKEE SITE	KOBOLD SITE III	KOBOLD SITE IV FOSS THOMAS SITE SOUTH FORK JUMP?	OLD BUFFALO SITE
ROCK ART SITES				DECKER SITE SPRING CREEK PETROGLYPH SITE	
ROCK - SHELTERS					OLD DECKER ROCKSHELTER
LOOKOUT SITES			TONGUE RIVER SENTRY SITE?		TWO VALLEY OVERLOOK DECKER POINT SITE SQUIRREL CREEK / DRY CREEK WATCHPOINT POST OFFICE VIEW SITE BUZZARD POINT SITE
QUARRY SITES					DRY CREEK QUARRY QUARRY KNOB SITE CARBONE QUARRY NORTH OF CAMP SITE TERRACED WORKSHOP SITE LATE START SITE
FORTIFICATION SITES				SQUIRREL CREEK BREASTWORKS?	
CRIBBED LOG STRUCTURES				GONE FROM THE WIND	

Prehistoric occupants of the plains. Two rock art sites, the Decker Site (Loendorf, Barnett, and Larson 1972:19-24) and the Spring Creek Petroglyph Site, provide insights into the artistic talents of late Indian occupants of the area. The Squirrel Creek Breastworks is probably a fortification site which remains from a Late Prehistoric or Historic Period skirmish in the area. The continuing presence of a large percentage (though not as high as during Late Middle Period times) of metamorphosed shale flakes among the lithic debris at Late Prehistoric Period occupation sites indicates a continuing use of local quarries for obtaining suitable material from which to fashion stone tools.

Metamorphosed shale outcroppings generally occur along the ridge tops separating the side drainages running into the Tongue River valley. Thus major metamorphosed shale quarries occur at relatively high elevations. Locations with good vantage points of the surrounding country occur at points along these ridges and often correspond with lookout and workshop type sites which are recognizable by a scattering of metamorphosed shale flaking debris. Diagnostic projectile points have not yet been recovered from these types of sites but it is suspected that they have been used to varying extents throughout the prehistoric sequence for the area which has just been reviewed. However, ridge tops must have been reached and functioned somewhat differently in the cultural settings of the Late Middle Prehistoric Period and the Late Prehistoric Period. The preliminary data from the first summer of archaeological field work in the Decker/Birney area suggests that the occupation sites of these two cultural periods tended to be situated in rather different topographical locations. A preliminary appraisal of the changing settlement pattern in the Decker/Birney area is the subject of some speculation in the next portion of this report.

Settlement Pattern Interpretation

General Theoretical Background. The archaeological survey, as contrasted with intensive excavation at a site or two, provides valuable data on site distribution within an area. From the various types of sites recorded; such as occupation areas, bison kills, quarries, lookout sites, rock art sites, and trails, it is possible to isolate site complexes where different activities by the same or culturally similar groups were taking place and thus in a general way proceed towards establishing a reconstruction of the life-ways of different cultural groups who have occupied an area through time. From the study of the distribution of occupation sites it is possible to gain some insights to the

cultural adaptation which was practiced in a given area in response to the environmental setting. The definition and purpose of settlement pattern analysis in archaeology has been expressed by Gordon R. Willey (1956:1) who writes, "In settlement, man inscribes upon the landscape certain modes of his existence. These settlement arrangements relate to the adjustments of man and culture to environment and to the organization of society in the broadest sense." and by William Y. Adams (1968:174) who feels, "In archaeology, the study of settlement pattern usually focuses on the distribution and character of habitation remains over wide geographical areas. From the regularities that are observed, it is possible to infer the presence of cultural and natural determinants that served to shape the relationship between man and environment. If there is time depth in the archaeological record, it is also possible to plot changes in the relationship of man and environment, as reflected in changing settlement patterns."

From the small sample of occupation sites thus far available for the Decker/Birney area, there is a hint of different cultural regularities as factors for occupation site location between Late Middle Prehistoric and Late Prehistoric times. There is some indication in the work of others on the plains that this relationship between culture and environment is also reflected in a broader geographical area on the plains than just the Decker/Birney area. Following the presentation of the data in support of this contention, several hypotheses will be presented as suggestions as to what natural and cultural determinants may have been responsible for this changing settlement pattern adaptation to the plains environment.

My sample of occupation sites (Table 2) thus far recorded in the Decker/Birney area is small and is presented as the basis from which my observation arose rather than as adequate support for the interpretive remarks which follow. More field work needs to be done in similar environmental settings in the plains region. During my 1972 field work in the Decker vicinity the impression of a different settlement pattern as indicated by the different locations of occupation sites between Late Middle Prehistoric and Late Prehistoric Period times as created by the sites listed in Table 2 was quite impressive. Carbone (1972) has also noticed this differential distribution. Of note here is William Sears' (1968:139) observation that, "A problem of some consequence is that, until we have reasonably full control of the total settlement pattern of a specific culture, the portion we do have some feeling for may be completely misunderstood. For example, a series of villages in one modern state or one river valley may be

part of a complex state with its center in another state or another valley. A good illustration is the Weeden Island-Kolomoki culture of the northwest Florida coast; the coastal sites of this culture have been known since 1902, but its single ceremonial center 100 miles inland was not recognized until forty years later. ... A culture settlement pattern must be demonstrably such if we are to engage in much more than guesswork."

While it is not expected that the network of social organization would have been as complex on the plains as in the Mississippian of the southeastern United States, Sears' cautionary note questions sample size and raises some additional thoughts. The Northwestern Plains featured a nomadic lifeway throughout its culture history and thus lacked permanently settled villages which are featured in settlement pattern analyses elsewhere. Thus seasonal considerations should be kept in mind when considering occupation site selection factors for plains sites (Loendorf 1970). Another consideration which I would propose as one to keep in mind may, if true, significantly reduce the sample size of what are usually considered as independent sites on the plains. Especially during the Late Middle Prehistoric Period, I feel it might be possible that what are usually considered inter-site distinctions on the plains may actually have been intra-site divisions. For example, small occupation sites located on adjacent ridges or scattered several hundred yards apart along one ridge could concievably have been part of the same, contemporaneous but geographically separated community; divided so as to take better advantage of exploitative possibilities of the area in some way -- such as visual surveillance of the surroundings. Necessary communications could easily have been maintained between these semi-separated segments of the community. Perhaps in a settlement pattern analysis such sites should be lumped, if my speculation could be shown to be true, as one site in order to portray more accurately the picture of the situation. Some examples from my field work in the Decker area of possibly related groups of Late Middle Prehistoric Period sites include the Divide Site and the High & Dry Site; the Pearson Creek Site and the Pearson Terrace; or the Canyon Rim Site and the Boulders & Yucca Site. Traditionally, I feel most often these would be looked at as independent, and somewhat temporally separated occupations of small nomadic groups of the Late Middle Prehistoric Period as outlined previously. I have, of course, recorded and reported these as distinct sites (See "Site Descriptions, Locations, Material Collected, and Recommendations" section of this report.), but I feel that the possibility of a divided community adaptation should be pointed out. Loendorf (1969:183) confronted a similar problem in the course of recording sites in the Pryor Mountains.

Adequate and reported archaeological surveys of areas of the Northwestern Plains have begun only in recent decades. As Willey (1956:1) has noted, "Time, money, and the combined labors of many people are necessary to produce sufficient data to make settlement analyses possible in any area; and, as all archeologists will attest, such information, even in the best-documented situations, is still relatively meager." My basic contention, which will be presented, that a certain kind of settlement pattern change occurred in the Decker vicinity, and perhaps elsewhere on the plains as well, is in need of additional support by archaeological survey and data collection; and if the reader should be convinced of the feasibility of this hypothesis, then the suggestions given as to why such a change may have occurred should be seen only as preliminary thoughts which may help direct further research.

Willey (1956:1) feels that "... settlements are a more direct reflection of social and economic activities than are most other aspects of material culture available to the archeologist." My suggestions as to the causes of a settlement pattern change on the Northwestern Plains between the Late Middle Prehistoric and Late Prehistoric Periods are based around major socio-economic factors which seem to have affected the prehistoric plains. Many of these have been foreshadowed in the previously presented review of plains culture history and it remains now to correlate them with possible effects on general settlement patterns. As a tempering ingrediant here, and as something to keep in mind for further research; Evon Z. Vogt (1956:181) has raised what may be a significant point, "... I would raise a general theoretical question which I do not believe has been resolved on the basis of existing research. This question concerns the extent to which cultural beliefs and values (features which are difficult to infer from archeological remains) may affect settlement patterns in a manner that appears to override considerations of ecological and economic adjustment." Future research should keep the potential for ideological factors in mind, but I feel that socio-economic considerations were probably of greater importance in cultural adaptations to the plains environment. From the reported archaeological literature I am unable to discern any evidence to suggest inferences as to how Middle Prehistoric Period cultural beliefs may have affected settlement patterns; although this has not received much published thought. Transhumance patterns which have been suggested as applicable to the prehistoric plains lifeway (Arthur 1968), which will be discussed shortly, rely on an economic interpretation of adaptation. Perhaps the case favoring economic factors may be more strongly developed from an ethnological point of view. Ideologies of historic

plains tribes affected settlement patterns in some respects, such as Sun Dance gatherings, but economic-environmental factors seem to have been of great importance in governing the seasonal aspects of such activities. Most of the data seems to reflect nomadic bison hunters utilizing and fitting into an often harsh environment in the most convenient fashion. Ewers (1968:75) for example points out that, "Customarily the tribes of this area spent the four or five coldest months of the year in winter quarters in sheltered river valleys where there was wood and water, as well as grass for their horses." From my cursory observations of the locations of historic white ranchsteads, they seem to be most often placed in sheltered spots -- most frequently on protected canyon floors or in groves of trees near a water course. Thus historic settlement patterns of both Indians and whites seem mainly to reflect practical, adaptive considerations in their location. It is of some interest to note that white settlements are permanent and correspond in some measure to those locations selected as winter sites by historic, nomadic Indian groups. To me, this suggests that winter severity is an important factor in the settlement pattern displayed by the white approach to the Great Plains.

Settlement Pattern Change in the Decker Area. Before noting the difference in site distribution, it will be necessary to characterize some elements of the general topography of the area that are relevant to the archaeological site distribution. As the Tongue River flows northward from the Big Horn Mountains in Wyoming to empty into the Yellowstone River at Miles City, Montana, it provides the major drainage through the Decker/Birney area. Tributary streams of the Tongue from the east and west form a network of canyons extending laterally for several miles on either side of the Tongue. Most of these tributaries are dry in the summer but some, such as Squirrel Creek, flow perennially. Some of the intermittent streams head in small springs which flow for only a few hundred yards. From the valley floors to the canyon rims there is an elevational differential of some 200 to 300 feet. Tributary drainages are separated by ridges that extend, somewhat as outstretched fingers, to the Tongue River valley. Low prairie flats, or basins, occur at the mouths of many of these canyons as they open to the Tongue River valley. Along the ridge tops and the flatlands behind them, expanses of upland short grass prairie are found.

In the course of the archaeological survey in the Decker/Birney area during the summer of 1972 I noticed a site distribution which seems to indicate that a settlement pattern change occurred between Late Middle Prehistoric

times and some time in the Late Prehistoric Period. Late Middle Prehistoric Period occupation sites, their temporal placement indicated by corner-notched projectile point styles, tended to be located along relatively high ridge top flats, on the tops of buttes, or near canyon heads. Late Middle Period occupation sites which fit this pattern include the Pearson Creek Site, the High & Dry Site, the Divide Site, the Canyon Rim Site, the Boulders & Yucca Site, the Point Site, and the Wounded Dove Site (Table 2). Two exceptions are the Prairie Spring Site and the Gas Galore Site which are situated on valley floors. The Landing Strip Site is questionable, as it is a very limited site, and perhaps the Pearson Terrace Site should be considered as a part of the Pearson Creek Site. During Late Prehistoric Period times, however, valley floors or low terraces seemed to have been favored as occupation areas as indicated by sites at which small triangular projectile points were found. Representative Late Period sites in this environmental setting include the 21 Ranch Site, Slim's Rings Site, the South Fork Bottom Site, and the Hellish Deerfly Site. Jess' Eagle Trap Site is somewhat of an exception in that it is located on a moderately high terrace overlooking the Tongue River, yet notice the elevation difference as typified by Late Middle Prehistoric Period site locations (Table 2). Diagnostic projectile points were not found at the Little Elk Tipi Rings and Munson Ranch Sites but if they are Late Prehistoric in date, as I suspect, they would lend support to the argument for low locations of later occupation sites. Diagnostics are not as definite as would be desirable for placement of the Red & Gray Site in the Late Prehistoric; its topographic location is similar to Jess' Eagle Trap Site. Specific data is not available for Arrowhead Rocks, but it generally seems to fall in with the low settlement locations during the Late Prehistoric. The high ridge setting for the Cox Fortification, a Historic Period site, seems to have been chosen specifically as a defensive measure. Diagnostic points were not found at the Pond Creek Site which is located on a mesa top. It is included as a possibility in the list of Late Prehistoric occupation sites due to the impression created in the field by the finding of small tip fragments and a variety of lithic materials. Its location would be contradictory to the general pattern I am arguing for unless defense was a consideration as suggested in the site description previously in this report.

I do not consider my notions concerning settlement pattern change to be absolute; several exceptions have already been noted in the discussion of Table 2. In certain situations, factors overriding the basic considerations may have to be taken into account -- warfare may be an example

TABLE 2

OCCUPATION SITE LOCATIONS

LATE MIDDLE PREHISTORIC PERIOD

SITE	ELEVATION	SETTING
PEARSON CREEK SITE	4100	CANYONHEAD - ADJOINS HIGH PRAIRIE BETWEEN TWO CREEK DRAINAGES
HIGH & DRY SITE	3840	HIGH PRAIRIE FLAT BETWEEN TWO CANYONS - RIDGE TOP
DIVIDE SITE	3920	RIDGE TOP BETWEEN TWO CANYONS
CANYON RIM SITE	4100	RIDGE TOP BETWEEN TWO CANYONS
BOULDERS & YUCCA SITE	4100	RIDGE TOP BETWEEN TWO CANYONS
POINT SITE	3840	POINT OF A RIDGE TOP
WOUNDED DOVE SITE	4000	CANYON HEAD - ADJOINS HIGH PLAIN
PRAIRIE SPRING SITE	3720	VALLEY FLOOR
GAS GACOLE SITE	3860	VALLEY FLOOR
LANDING STRIP SITE?	3680	VALLEY FLOOR
PEARSON TERRACE?	4100	HIGH TERRACE - JUST BELOW HIGH PLAIN BETWEEN TWO CREEK DRAINAGES

LATE PREHISTORIC PERIOD

SITE	ELEVATION	SETTING
21 RANCH SITE	3660	VALLEY FLOOR
SLIMIS RINGS SITE	4300	LOW TERRACE
SOUTH FORK BOTTOM SITE	3640	VALLEY FLOOR
HELLISH DEERFLY SITE	3640	VALLEY FLOOR
JESSI EAGLE TRAP SITE	3500	HIGH TERRACE - BLUFF ABOVE TONGUE RIVER
LITTLE ELK TIPI RINGS?	3700	VALLEY FLOOR
MUNSON RANCH SITE?	3440	VALLEY FLOOR - BESIDE TONGUE RIVER
RED & GRAY SITE?	3460	HIGH TERRACE - BLUFF ABOVE TONGUE RIVER
ARROWHEAD ROCK	--	--
COX FORTIFICATION (HISTORIC)	3900 (APPROX.)	HIGH RIDGE TOP
POND CREEK SITE?	3900	MESA TOP

and will be discussed later. Rather I feel there is a general trend in the settlement pattern change from relatively high, open areas for Late Middle Prehistoric Period occupation sites to relatively low and protected locations for occupation during Late Prehistoric Period times -- a pattern which does seem to fit the data thus far available for the Decker area.

Perhaps it should again be emphasised that my data is limited; especially concerning the Late Prehistoric Period. My argument lies most heavily on the predominantly high, open, and dry locations of Late Middle Prehistoric Period occupation sites in the Decker area. I feel it is justifiable to present several hypotheses as to why a settlement pattern change may have occurred on this area of the plains as related to prehistoric innovations influencing the plains at about this time. Future archaeological work in the Decker/Birney area, and perhaps elsewhere as well, should be brought to bear on these ideas as additional research is needed to lend support to or to contradict the hypotheses. It will be interesting to see what happens as the survey moves north towards Birney. This area becomes somewhat more rugged and generally has more tree cover. Several local people I talked with last summer told me of tipi rings scattered along the ridges not too far north of the area I managed to survey. In the area I covered, I found tipi rings on only one ridge top site, the Divide Site. To support my contention of a settlement pattern shift, these ridge top tipi ring sites to the north should date to Late Middle Prehistoric times and yield corner-notched projectile points, as did the Divide Site. It is my impression that tipi rings tend to be found more often at Late Prehistoric sites and depending on the outcome of investigations of ridge top tipi rings near Birney, these may well cast some doubt on my suggestions as an explanatory device, or demand some modifying statements.

It is significant that Gerald Carbone, who has a greater familiarity with the Tongue River drainage in terms of aerial extent and time spent roaming the country than I do, independently reached essentially the same field observation, at least certainly with respect to Middle Period site locations. Carbone (1972:8) writes, "An interesting observation was that very few side-notch points were found on the hilltop type campsites. Here, mostly corner-notch and McKean types appeared regularly. Spring sites seemed to contain all varieties with the side-notch represented more often."

Several suggestions will be made as to what reasons may be responsible for such a shift in settlement pattern,

but first it remains to review possible signs of such a change elsewhere on the Great Plains and to distinguish this phenomena from a transhumance pattern of adaptation.

Indications for Similar Change Elsewhere on the Plains. Waldo R. Wedel, a well known scholar of the prehistoric Great Plains, has specifically addressed himself to a discussion of settlement patterns on the plains. Wedel's contribution (1956:81-92) is entitled "Changing Settlement Patterns in the Great Plains" and is in Prehistoric Settlement Patterns in the New World edited by Gordon R. Willey. Wedel's article spatially discusses the Central Plains and the Middle Missouri area as well as the Northwestern Plains. The temporal aspect under review includes the entire range of culture history from the Paleo-Indians through the historic village tribes on the Missouri River in North Dakota. With such a range of spatial and temporal variation under consideration, the purpose of the article is to provide a general view rather than to discuss specifics of formal change in regional chronologies. The variations which are noted are characterized in the following terms, "These variations [in settlement patterns] are not random or chance phenomena. They reflect in part the environmental factor, in part social and historical forces. While we cannot yet be certain of the degree of influence exerted in all cases by the several variables indicated, it is evident that any reconstruction or interpretation that ignores either is open to question (Wedel 1956:81)."

Concerning the Northwestern Plains, Wedel (1952:92) notes that, "Largely for environmental reasons, the Northwestern Plains have always been predominantly a region of hunting or of hunting and gathering subsistence economies, with cultural development and population held to a relatively low level until the introduction of the horse two centuries or more ago." In addition to opening the plains to greater numbers of people by increasing the attractiveness of the nomadic way of life, it will later be argued in this report that the introduction of the horse is one possible explanation for the previously defined change in settlement pattern noted in the Decker area.

Jack T. Hughes (1949) reports an archaeological survey of the Black Hills region in western South Dakota and northeastern Wyoming which offers data supporting a similar settlement pattern change in that area. Although I am not personally familiar with the Black Hills region, it seems that they are somewhat topographically similar to the Birney area and the Wolf and Rosebud Mountains to the west of my survey area. The pine covered ridges of the Decker/Birney area are reminiscent of the broken, forested hills in the

Black Hills region. Hughes (1949) defines eight foci on the basis of his archaeological research. The settlement patterns displayed and the suggested temporal position of several of these will be reviewed as they seem to relate to the time of change in the Decker area. For the Limestone Butte Focus, "Occupational areas are located in a variety of positions - butte tops, valley rims, valley slopes, and creek and river terraces. Moderately long occupation of a rather small area seems to have been the rule (Hughes 1949:273)." Diagnostic points are described as, "Large, corner-notched projectile points with expanding stems, straight to convex bases, and strong to barbed shoulders are typical (Hughes 1949:273)." In the Sheps Canyon Focus occupation sites are located on creek or river terraces and along river bluffs and the sites yielded artifacts described as "Light, corner-notched points are characteristic (Hughes 1949:273)." Although these projectile point styles are not illustrated, from the written descriptions I expect they would fall within the Middle Prehistoric Period for the Northwestern Plains. In the later Red Canyon Focus, featuring small triangular points, "Very small camps located on slopes or terraces near creeks or rivers appear to have been the rule (Hughes 1949:275)." In the Dry Creek Focus, again characterized by small triangular projectile points among other features, "Occupational remains are spottily distributed over a broad expanse of creek or river terrace. Brief occupations by large groups seem indicated (Hughes 1949:276)." Thus Hughes provides some useful data which seems to indicate a shift similar to that which occurred in the Decker/Birney area from relatively high, open campsite locations to lower creek terraces or bottomland settings also occurred in the Black Hills area between the Middle Prehistoric and Late Prehistoric Periods.

Some apparently supportive data comes from the spatial/temporal distribution of tipi ring sites which begin in Middle Prehistoric times and continue throughout the Late Prehistoric Period. The limited data for the Decker vicinity as recorded by the 1972 archaeological survey has already been summarized. In discussing what are apparently Middle Period tipi ring sites, Mulloy (1958:212) writes, "The locations in which they are found are puzzling. The typical location is on the edge of a cliff, on the highest points of a cuesta, or along the wind swept edges of terrace fingers. Usually the locality is without shelter, wood, or water and altogether a poor camp site. Typically a wide view of surrounding territory is commanded. Occasionally the location differs and examples are found in valley bottoms in reasonably good camp sites." While all of these features may not be remnants of domestic structures at

occupation sites, it seems that many of them are and I would suggest that those in high, open locations would tend to date to the Late Middle Prehistoric Period while those in what seem to us to be good camp locations such as valley bottoms near water are predominantly Late Prehistoric Period occupation sites.

In the Shoshone Basin of Wyoming, Mulloy found a number of campsites with corner-notched projectile points apparently dating to the Late Middle Prehistoric Period (1954:63). In discussing tipi ring sites probably dating to this time period, Mulloy notes that they are generally in what we would consider bad locations. Possible defensive measures are considered but the locations do not seem too good in this respect either; however, it is noted that the sites command an excellent view of lower ground (Mulloy 1954:54). Mulloy (1954:54) suggests that, "This might have been an advantage to a camp in searching for game or enemies, but the same results could have been obtained by a short climb to a butte top or terrace finger from a much more desirable camping place in the sheltered bottoms." It will be suggested later in this report that camping in high, open locations may indeed have been the most expedient cultural adaptation to the pedestrian, atlatl-using nomads of the Northwestern Plains during the Late Middle Prehistoric Period at certain seasons of the year. In the Big Horn Canyon area of northern Wyoming and southern Montana, just north of the Shoshone Basin, Lionel A. Brown (1969:38) and Wilfred M. Illusted (1969:96) have both reported investigations of Late Prehistoric Period tipi ring sites, as indicated by the occurrence of small triangular projectile points, which are situated on low terraces near the Big Horn River. No open Middle Prehistoric Period occupation sites are reported from similar contexts within the canyon area. Illusted (1969:91) particularly is struck by the absence of Late Middle Prehistoric material in the canyon.

J. Jacob Hoffman (1953:5) makes note of the different topographical locations in which tipi rings are found in the following: "In physiographic location, tipi rings are usually found on or near the tops of hills and buttes or on broad flats close to running water." No general differences in the characteristics of tipi rings in these different locations are discussed.

In his study of tipi rings in north-central Montana, Kehoe (1960:441) notes that their locations vary from valley bottoms to flat topped ridges. While temporal distinctions or diagnostic projectile points from the sites are not discussed, Kehoe (1960:442) writes that, "... the rings occurring on elevated areas seem to average smaller

in size than those found in low situations, suggesting a possible correlation between the size of a ring and its topographic setting." Kehoe points out a similar observation made in Colorado. My review of Kehoe's reference verified the following quote from Withers (1950:11), "Following a suggestion I got from Bliss, I think we can probably workout two occupations from the stone circle sites, one with fairly small circles located on the bluffs above the river bottoms, and one represented by the larger circles found consistently on the valley floors." Kehoe (1960:442) then goes on to state, "This difference would be difficult to explain, other than by either supposing a preference for smaller tipis on the higher locations (owing perhaps to the force of the winds there), or by postulating different cultural occupations, as Withers suggests, during one of which, possibly, a climatic change flooded the bottoms ...". I would suggest that the difference may be one of temporally different cultural adaptations to the plains environment. Elsewhere in his article, Kehoe (1960:462) presents evidence that the size of tipis increased following the introduction of the horse. Seasonal differences in the size of tipis is, of course, another possibility.

Kehoe's (1960) comments, as previously quoted, are directed towards explaining the differential distribution of tipi rings. His data from tipi ring sites in north-central Montana, however, is lacking in firm temporal indications and thus variation here may be due to environmental factors as Kehoe suggests. In other cases, as indicated by Hughes, Malloy, Husted, and Brown; general dates are indicated which I believe suggest that it is valid to view the problem of different topographical locations of occupation sites on the Northwestern Plains from a temporal perspective.

George Metcalf (1963:33) reports that tipi rings are frequent on the Fort Berthold Indian Reservation in west-central North Dakota. The rings are most often between 15 and 25 feet in diameter, and "In the Garrison Reservoir area tipi ring sites were most commonly found on the uplands and often far from streams (Metcalf 1963:35)." Based on data collected from Indian informants, Metcalf (1963:34) writes, "These were said to have been summer camps, hunting parties often encamping on the high places, where the rings are most commonly found, to escape the mosquitoes present nearer the streams; or, arriving at the valley rim at a late hour, they often encamped on the upland in preference to attempting the descent of the rugged valley sides in the failing light." Thus some possible reasons for relatively high locations of Late Prehistoric Period tipi ring sites are offered as related to seasonal hunting activities in the

Middle Missouri area. Again, however, good archaeological temporal data is lacking for these tipi ring sites. Of the twenty tipi ring sites discussed (Metcalf 1963:35-45), most produced no diagnostic projectile points. At seven of the sites, previous collectors had found points but information regarding types could not be obtained. One of the tipi ring sites produced corner-notched material. In northeastern Montana tipi rings are reported to be very common and assumed to be mainly Late Prehistoric in date (Joyes and Jerde 1970). "The rings occur on river terraces, along the crests of hills, in small coulees, and on spurs overlooking the river valleys. The tipi rings range from 10 to 30 feet in diameter, and occur singly or in groups of 50 or more. As with the bison kills, the largest concentrations of tipi rings seem to occur along the rivers and streams, with smaller concentrations being typical of the uplands. Small numbers of flakes and occasional pebble hammerstones are found at a large proportion of the tipi ring sites; however, only one diagnostic artifact has been found -- a Late Side-notched projectile point (Joyes and Jerde 1970:9)." Although diagnostic artifacts are very infrequent at these sites, Joyes and Jerde (1970:9) presume they are all part of a similar cultural manifestation. Joyes and Jerde's (1970:12) interpretation of this data suggests seasonal differences in occupation with "macro-band groupings" inhabiting the large sites in the river valleys and "micro-bands" seasonally dispersing to the higher elevations.

Elevational differences in site location as related to seasonal occupation has been proposed by L. Lynn O'Brien (1973) for the Yellowstone and Powder River valleys. From his observations in the Pine Hills area around Miles City, O'Brien (1973:91) feels that if a seasonal pattern of site location existed in the area, it was one of summer occupation sites on hills and winter sites at lower elevations in the river valleys. Fredlund and Fredlund (1973:31) suggest a similar seasonal use of the broken topography in the Sarpy Creek area. Unfortunately, good temporal ties cannot be demonstrated for many of these sites due to a lack of diagnostic projectile points. A similar problem exists in the Decker/Birney area. Notice the number of small occupation sites on Table 1 which cannot be assigned a temporal placement. It is my subjective opinion, however, that many of these sites which are located at relatively high elevations probably date to the Late Middle Prehistoric Period.

Thus it seems that there is some evidence to suggest that a general settlement pattern change similar to that observed for the Decker vicinity has also occurred in other

areas of the Northwestern Plains; however, the possibility of supplementary, or perhaps alternative interpretations, has also been indicated. Further, it seems that this change occurred at about the same time in other areas for which there is temporal data -- that is between the general time segments encompassed by the Late Middle and Late Prehistoric Periods.

I know of no attempts in the literature to correlate such a settlement pattern change with major cultural innovations which affected the Northwestern Plains in prehistoric times. I will begin such an attempt shortly, but first I wish to clarify the difference between this suspected phenomena and transhumance patterns of cultural adaptation.

The Concept of Transhumance. Emma Lou Davis (1963:202) defines this concept in the following terms, "Seasonal transhumance is the practice of changing abode in a regular and traditionally recognized way, as natural food crops are followed." Working from the ethnographic present of nomadic hunting and gathering groups in the Great Basin, Davis demonstrates how the archaeological record supports the idea of a seasonal round of different land use patterns. Generally, the pattern is one of wintering at lower elevations and gradually moving to mountain valleys in the summer.

The concept of seasonal transhumance has been applied to the plains/mountain environs of the Northwestern Plains. George W. Arthur (1966) convincingly applies this concept to his field research in the Upper Yellowstone River drainage area of south-central Montana. Arthur (1966:164) feels that seasonal migration patterns may have been established in Early Prehistoric Period times on the Northwestern Plains. Lawrence L. Loendorf (1967:91) has suggested that a transhumant way of life was followed by prehistoric peoples in the Clark Fork River area of south-central Montana: "The families grouped together in the Clark Fork Valley for the winter. When spring arrived, or when the dried meat from the autumn hunt was gone, the villages broke into family units who traveled to the mountains to hunt." Loendorf's (1970) factor analysis of Pryor Mountain sites supports the applicability of a seasonal transhumance model for the Pryor Mountain area. Loendorf (1970:40) feels, "... that this annual cycle was practiced from the beginning of the Middle Prehistoric Period until the introduction of the horse, that is from 4000 B.C. to A.D. 1700." For sites located in Rosebud County, north of the Decker/Birney area, Dale E. Fredlund (1973:71-72) has suggested a transhumance pattern leading to the Big Horn Mountains for the summer.

A pattern of seasonal transhumance was very likely followed by the prehistoric inhabitants whose passing has been recorded in the Decker/Birney area. It seems likely that nomadic peoples in this area may have seasonally followed up the Tongue River drainage system into the Big Horn Mountains of Wyoming. I would speculate that flakes of a brownish colored agate that are occasionally found at sites in the Decker/Birney area, and perhaps some quartzite as well, was material quarried at locations in the Big Horn Mountains. However, river gravels may contain enough amounts of these materials, moved by natural causes from the mountains, to account for their presence around Decker. Should a transhumance model be developed which incorporates sites in this area when more data is available, the Decker/Birney vicinity probably would be shown to represent a predominantly fall-winter-early spring occupation region.

In any event, it is not my purpose here to argue for or against the applicability of a transhumance model to the Decker/Birney data; rather, it is to distinguish the settlement pattern shift as previously pointed out for the area from the transhumance concept. In transhumance thought, the Decker/Birney area would be considered only one environmental area, or zone, to be utilized in a seasonal round of activities. In addition, it has been pointed out that the change in site distribution in the Decker vicinity seems to be a function of a temporal dimension of far greater magnitude than seasonality. There seems to have been factors selecting for settlement pattern change within particular environmental areas as the cultural milieu of the Northwestern Plains changed through time. It remains now to suggest some possible factors responsible for such a change.

Possible Reasons for the Settlement Pattern Change. Wedel (1956:81) has pointed out the need for considering both natural and cultural factors. Among the natural factors which will be considered here are extinct springs and an increase in the numbers of bison on the plains. Cultural factors which seem to me to be of probable importance include warfare, the introduction of the bow and arrow sometime about A.D. 500, and the introduction of the horse about A.D. 1750.

During the course of my survey it was observed that at present there are often small springs located near the heads of canyons and side canyons at relatively high elevations. These do not presently correlate well with the high and dry Late Middle Period occupation sites on the ridge tops. Perhaps in the past hydrologic patterns were similar in that seasonal springs emerged from similar elevations but in different areas. These springs, then, may have been

in the vicinity of past occupation areas thus once providing a water resource at now dry locations and explaining site location by this attractive factor. Later cultural material tends to be found around springs which are live at present (Carbone 1972).

However, in view of the fact that a similar shift in settlement pattern seems to have occurred elsewhere on the plains at about the same time, it is my contention that this possibility is probably unlikely -- we need an interpretation of broader magnitude.

Several authors have suggested that the numbers of bison on the plains were increasing in Late Prehistoric times. Mulloy (1958:214), for example, in noting that human population numbers on the plains apparently increased at this time writes that, "It is tentatively suggested that the attraction may have been an increasing buffalo population which could be tapped by trapping and other communal techniques." Arthur (1968:61) also refers to the significance of greater numbers of bison during the Late Prehistoric Period.

It seems likely that in addition to increasing numbers of desirable game animals, new cultural innovations were of even greater importance in effecting the subsistence economy and thus, perhaps, influencing settlement patterns.

Warfare among plains Indians is one cultural factor which may have had an influence on settlement pattern. It might be argued that ridge and mesa top locations with a good view of the surrounding country are choice defensive positions. In Melanesia, for example, a region which is much subjected to inter-tribal warfare, the villages are often located on high ridge tops as a defensive measure which results in great inconvenience of access to some resources such as water. Writing about the Northwestern Plains, Richard Forbis (1962:69) feels, "Most likely, upon attempting to immigrate, they met a hostile reception. Intruders would have had to fight for their place; the Plains militarism, so characteristic of historic times, was probably an ancient trait, not one developed in the period of cultural change after the coming of the horse." If true, this suggests that warfare may have been affecting settlement patterns on the plains for quite some time.

In some ethnographically collected data we find both an indication of a settlement pattern change and the suggestion that warfare was an important factor in considering occupation site locations. Stands In Timber and Liberty (1967:123) report that, "Many of the tepee rings are along

the valleys, but in the earlier days they did not camp in the valleys so much, but up on the flats and divides in high places. Many more teepee rings can be found up there. It was easier to defend a village from a high place when the enemy attacked. They could shoot down with bows and arrows better, and run faster downhill to fight. Down by the rivers and in the brush they could be surrounded more easily. But in the high places, they often had to carry water a long way. That much was bad about it. Later on, when they were stronger, they camped lower down." Just what time period "earlier days" in the above quotation refers to is not altogether clear, although the reference to the bow and arrow and the Cheyenne's relatively late entry onto the Northwestern Plains suggests that this change occurred within that would archaeologically be designated the Late Prehistoric Period. These references indicate that the effect of warfare should be kept in mind as an explanation for site location. Indeed, it seems that in certain specific instances in the Decker/Birney area, such as the Cox Fortification and perhaps the Pond Creek Site, the threat of attack was the primary consideration in occupation site location. However, I feel that in terms of the general picture, there may be more important explanatory factors.

Two other important events in plains prehistory which may have affected aboriginal settlement patterns are the introduction of the bow and arrow sometime late in the Late Middle Prehistoric Period or early in the Late Prehistoric Period and the introduction of the horse sometime about A.D. 1750. Concerning these two important innovations, Husted (1969:98) writes, "The introduction of the bow and arrow, probably sometime between A.D. 0 and 500, would have had an important affect on hunting methods - as would the acquisition of horses by the resident Shoshoni and later arriving Crow. These two events, the appearance of the bow and horses, appear to be the first major innovations in the culture history of the region since its inception." M. W. Stirling (1960:265), in writing about the use of the atlatl, notes that the bow and arrow was recognized as a more efficient hunting weapon than the atlatl and dart. Husted (1969:91) points out that during the Late Middle Prehistoric Period there was a change from large to small corner-notched projectile points about A.D. 400-500 and that these smaller points were probably used to tip arrows. The bow and arrow was definitely in use by A.D. 700 (Husted 1969:91). The use of the atlatl during Late Middle Prehistoric times is indicated by the finding of an atlatl weight and corner-notched projectile points at a site near Helena, Montana (Taylor 1964:101,118, and 191). The use of the bow and arrow on the Northwestern Plains is

associated with a series of small, side-notched projectile points. Kehoe (1966) discusses these as being Avonlea, Prairie Side-notched, and Plains Side-notched with the Avonlea type being the earliest. Apparently, Avonlea influence moved from north to south in the Northwestern Plains and thus Avonlea sites date somewhat earlier in Canada and northern Montana than in southern Montana. Ann M. Johnson (1970) has raised the question of sampling which may yet affect the spatial/temporal distribution of Avonlea points. Husted (1969:64) dates the occurrence of Avonlea material in southern Montana, on the basis of his Big Horn Canyon data, at about A.D. 600 through A.D. 900.

The appearance of small, side-notched projectile point styles is associated with large scale communal bison hunts (Kehoe 1966). The suggestion that the bison population on the Great Plains significantly increased during Late Prehistoric times has already been mentioned. Frison (1971) argues for a seasonal, autumn oriented, use of communal hunting techniques. Although pounds for the communal killing of bison were in use during the Middle Prehistoric Period, communal hunting techniques, especially the buffalo jump, reached their height of popularity and efficiency during the Late Prehistoric Period. Increased hunting efficiency based on the bow and arrow and the use of communal hunting techniques, or a greater emphasis on seasonal hunting of big game animals, primarily the bison, may have served to alter occupation site location during the Late Prehistoric Period. Perhaps these changes, a larger bison population on the plains and increased hunting efficiency based on the bow and arrow and the use of communal hunting techniques, early in the Late Prehistoric Period resulted in some modification or a lessening in importance of the transhumance cycle. In suggesting that transhumance was practiced until the introduction of the horse, Loendorf (1970:40) notes that "Middle Period peoples may have spent more time in the alpine zone during the summer, as indicated by the number and size of Middle Period sites at higher elevations; but, nevertheless, the same general cycle was practiced." I believe it is to this phenomena that Loendorf (1970:34) refers in writing that "Middle Period people selected campsites at higher elevations than [sic] Late Period peoples."

Kehoe (1966:827) dates the small side-notched points of the Northwestern Plains in the following fashion: Avonlea from about A.D. 200 until A.D. 700, Prairie Side-notched from about A.D. 700 through A.D. 1300, and Plains Side-notched beginning about A.D. 1300 and persisting into the Historic Period. Stone projectile points were replaced by metal points in the Historic Period as trade items intro-

duced by white traders. Kehoe (1966) equates Avonlea projectile points with Athabascan peoples, the Prairie Side-notched with Algonkians, and the Plains Side-notched with Mississippian influences from the east. None of the artifacts that I found at Late Prehistoric Period occupation sites in the Decker/Birney area seem to be of the Avonlea or Prairie Side-notched types. Typologically, the few small, triangular points I recovered show closest relationship to the Plains Side-notched varieties. Thus, according to Kehoe, this suggests a date relatively late in the Late Prehistoric Period for the Late Prehistoric occupation sites in the Decker/Birney area. Although Avonlea and Prairie Side-notched material has been found in southern Montana, it tends to be more common further north (Kehoe 1966:839), dates for Avonlea are earlier to the north (Husted 1969:64) and (Johnson 1970), and Kehoe's suggested linguistic connections point to a northern origin of these types. Perhaps further archaeological survey work in the Decker/Birney area will reveal significant amounts of Avonlea and/or Prairie Side-notched projectile point types at occupation sites which could be of great importance to our understanding of the bow and arrow as a possible factor in influencing choice of settlement patterns in this area; or it may be that proto-Shoshonean (Husted 1969) influences tended to hold sway in this area of southern Montana and northern Wyoming until the later influxes of Mississippian influenced ideas, recognized by the use of Plains Side-notched points (Kehoe 1966), began to enter the area from the east relatively late in the Late Prehistoric Period. The Plains Village Tradition of the Middle Missouri Sub-area in North and South Dakota shows relationships to Mississippian cultures (Willey 1966:320) and had important effects on the Northwestern Plains during the Late Prehistoric Period.

The introduction of the horse undoubtedly had a great affect on Plains Indian culture as noted by Clark Wissler (1927) some fifty years ago and expanded by subsequent students of plains ethnology such as John Ewers (1955). It seems probable that the horse had an effect on settlement patterns both in terms of the increased mobility it afforded and the new demands, such as adequate graze, which horse herds required.

The hypothesis for the effect of the horse on aboriginal plains settlement patterns may be stated in terms of a constant importance of visual acuity in the plains environment and differential mobility capabilities through time.

It seems that visual acuity has been of great importance in man's cultural adaptation to the plains environment

and the importance of this keen visual observation has remained constant through time. Walter Prescott Webb (1931:79), a plains historian, documents this notion for the Historic Period; "An Indian scout perched on a distant hill could, by maneuvering his horse, give his party information as to the proximity of game and the presence, number, and direction of the enemy, and could indicate what should be done in the emergency." Webb goes on to indicate how visual observation has been important to historic white communication on the plains. The relationship between the open plains environment and vision as a human sense adaptable to it is obvious.

The importance of the horse in providing a means of human transportation better suited to the plains than the previous pedestrian nomadic adaptation has been noted by various authors. Wissler (1927:18) writes, "In early times the dog was used to transport baggage and supplies, but later, horses became very abundant and it is not far wrong to speak of all Plains tribes as horsemen." Mulloy (1958: 214) notes that, "... the introduction of the horse greatly increased the attractiveness [of the plains] by adding a solution to what was probably the knottiest of the problems of the horseless peoples, the following of the herds and the transportation of meat and gear." Ewers (1955:339), "It appears to me that the influence of the horse permeated and modified to a greater or lesser degree every major aspect of Plains Indian life." Fredlund (1973:64) feels that, "The horse so changed the life styles of peoples on the Northern Plains that it is imperative that we divide prehistoric time into pre-horse and post-horse periods when we attempt to interpret archaeological data and reconstruct past lifeways." Thus facilities for human mobility on the plains may be seen as a variable. In pre-horse times, man was restricted to foot travel through his own powers with the dog as a beast of burden. The horse greatly increased human mobility on the plains by providing an animal which would carry him.

This may provide an explanation for the observed change in settlement pattern. Settlement pattern is seen here as being an integral part of the cultural adaptation to the environment. Thus, during pre-horse times under conditions of restricted mobility; the cultural adaptation may have been to camp high -- camp along ridges, on mesa tops, or other such locations where visual surveillance of the environment was convenient, game animals could be spotted and then pursued. Fredlund (1973:67) has offered some suggestions as to how pre-horse peoples on the plains may have utilized topographic features in their hunting patterns. This could have been done at the expense

of such necessities as water, among other conveniences as well. As Wedel (1963:12) has noted, "It seems to me entirely possible that, like other foot Indians living in arid or semiarid environments, the pedestrian plainsmen may have been conditioned from long experience to survival on limited amounts of water. Such conditioning, the practice of carrying water in paunch or skin bags, and reliance when necessary on consumption of body fluids of the animals slain, would have obviated the necessity for camping each and every night at a water hole." Concerning some of his sites on flat buttes and at the ends of ridges in the Tongue River area in the vicinity with which my work is concerned, Carbonc (1972:8) writes, "Good observation seemed to be the choice rather than a water supply." Elsewhere on the plains, Wedel has made similar observations. For example, Wedel (1963:13) reports that, "In north-western Kansas, sites similarly occupy hilltops, usually no more than a half-mile away from possible water. Here a primary consideration seems to have been visibility, since most such locations command long views of nearby valleys." A temporal indication is not given for these sites, but Wedel (1963:13) reports a similar pattern near Burlington, Colorado where pottery occurs on the hilltop occupation sites which suggests that at least some of these sites are relatively late in date.

As ethnologists and archaeologists of the plains have observed, cultural adaptation to the plains environment was greatly modified with the advent of the horse. After the horse, and increased mobility, it may have become more feasible to choose what seem to us more convenient campsite locations. Scouts, mounted on horsesback, could easily and economically be sent to observation locations while a main camp was maintained for cultural operations in a more convenient, less exposed location, and nearer a water source. Thus the variable of horse mobility may have facilitated a new settlement pattern adaptation in the plains environment while providing a new way of continuing the visual acuity of the surroundings which remained of great importance. Concomitant with the horse were concerns such as graze for the horse herds which was more available in the valley bottoms (Ewers 1955:40). The horse may have resulted in an almost complete reversal of some settlement patterns. The increased mobility afforded by the horse and the demands of caring for the animals may have induced a new settlement pattern oriented towards valley floor or low terrace occupation sites while people were still able to conveniently use visual perception of their environment due to much greater mobility. Fredlund (1973:73) has recently argued for the influence of the horse in effecting an occupation pattern change, "In a sense, they became freed from the

limits imposed by the topography of the land. ... Occupational patterns also changed; instead of living in small rockshelters the people began living along the creeks on the open grassy flats."

Perhaps it should again be noted that this argument tends to presuppose a predominantly hunting oriented economy for the Northwestern Plains from the Late Middle Prehistoric Period through Historic times. This point has been established earlier by reference to previous archaeological work on the plains and by noting that occupation sites recorded in the Decker/Birney area seem to demonstrate an emphasis on hunting due to the tool types present and the lack of grinding stones; and perhaps, their locations. Loendorf (1970:34) feels that a good view is related to the food quest in terms of a campsite selection factor.

The horse was a very recent introduction onto the prehistoric Northwestern Plains; reaching the area only shortly before white historic documents applicable to the region begin. Thus in terms of the much longer archaeological perspective, the horse is largely ignored as a factor for many archaeological problems. Caution should be exercised, however, against tending to interpret the pre-horse archaeological periods in terms of the ethnographic present for the Northwestern Plains (Ewers 1968:78) or in terms of our own biases for campsite selection -- conditions which are perhaps significantly influenced by mobility potential. In terms of the later portion of the Late Prehistoric and Historic Periods the horse must be considered as an important factor in settlement pattern studies. The increased mobility afforded by the horse probably had a great modifying influence on the previous dog/human pedestrian nomadism both in terms of transhumance pattern and perhaps even in settlement patterns within ecological zones dependent on relatively minor variation in topography.

At this time, it does not seem to me that there is sufficient reported survey data to answer many of the questions concerning settlement patterns on the prehistoric Northwestern Plains. Some information, specifically that of Hughes (1949), seems to suggest a pre-horse beginning for a shift in settlement pattern as pointed out in this report. Although specific dates are not available, the Red Canyon Focus with its small triangular projectile points and small campsites may date to early in the Late Prehistoric Period while the Dry Creek Focus sites with "Brief occupations by large groups ... (Hughes 1949:276)" and small triangular points may be datable to later in the Late Prehistoric Period. Occupation sites of both of these foci are apparently more typically located at relatively lower

locations than previous manifestations in the Black Hills area.

On the other hand, if it is assumed that an increase in the size of tipi rings correlates with the introduction of the horse, then the data presented by Withers (1950) and Kehoe (1960) that tipi rings of smaller diameter are characteristically found at higher, open locations with a good view of the surrounding country while larger tipi rings usually occur at lower elevations seems to suggest that the horse may have been the most important factor in changing settlement patterns. Further comparative work of tipi ring sites for which data including general setting, diagnostic projectile points, and ring diameters are available may be one approach to better understanding of this problem.

Perhaps influxes of people from the east during the Late Prehistoric Period tended to orient their adaptation to the plains environment along the major river drainages which provided an ecological setting more familiar to them; and then this pattern served as a convenient pre-adaptation in terms of settlement pattern for the introduction of the horse which was soon to occur.

Summary Recommendations

Additional archaeological field survey in the Decker/Birney area is strongly recommended. The data presented by Loendorf, Barnett, and Larson (1972) and this report indicate both a variety and intensity of archaeological sites in the south-western portion of the Bureau of Land Management's "Birney/Decker Planning Unit". The situation will probably be similar throughout the Tongue River drainage. Archaeological data gathered from this area has a great potential for furthering our understanding of Northwestern Plains prehistory.

Recommendations for further work at individual sites have been presented in an earlier section of this report. From an overall point of view, these recommendations indicate that additional work at many sites located during the 1972 archaeological survey in the Decker/Birney area would be desirable. Unfortunately, limitations of time and money often prohibit attaining as complete an archaeological picture of an area as would be desirable. Site excavation data are needed to understand the area. Lewis R. Binford (1972) has suggested an outline of sampling procedures applicable to the recovery of archaeological data. Perhaps a similar research design may be useful in the site testing and excavation phases of archaeological research in the Decker/Birney area (Binford 1972:154).

Loendorf, Barnett, and Larson (1972:81) have noted, "The area [Decker/Birney] may be critical in the overall understanding of northwestern plains settlement patterns; to allow the destruction of archaeological remains by coal mining before they can be adequately studied, could mean that we are losing an opportunity to understand large segments of northwestern plains prehistory." With this statement I would agree and the brunt of my interpretive remarks has been aimed at a consideration of certain settlement patterns. This preliminary analysis suggests that there may be significant temporal differences in prehistoric plains settlement patterns in particular environmental areas within the broader context of transhumance. However, as the nature of this discussion should lead the reader to realize, the questions brought up here have not been adequately answered. Several possible alternatives have been discussed which could all result in ridge top occupation sites location but for very different reasons. In specific cases, any one factor may override others in the process of site selection; but I feel that enough data have been presented through studies on the plains in similar topographic settings, to suggest that there may have been a general trend from high, open Middle Prehistoric Period sites to low, protected Late Prehistoric occupation sites in areas of broken topography. This observation warrents an attempt at explanation. Perhaps future insight will indicate that cultural factors are not even involved or that there were as yet undefined differential seasonal attractions to the same areas which varied through time, but I am at present inclined to feel that cultural factors - especially economic - were important and an initial consideration of some possibilities has begun.

Regional surveys are especially valuable in terms of providing data useful in the study of settlement patterns. More such work will add to an understanding of the seemingly changing situation of the Great Plains. Thus descriptive site data gathered from archaeological field work in the Decker/Birney area can provide further insights to our understanding of plains anthropology. More such data would be useful. This information gathered from field surveys is, of course, also applicable to other problems of plains prehistory as well.

Future archaeological field survey in this area may make use of this report as a preliminary base from which to proceed. My initial work was not problem oriented. However, from this beginning several hypotheses regarding plains settlement patterns have been developed as suggested by this particular set of field data and a methodology may now be developed to test these hypotheses (Binford 1968) as

a part of future research in the Decker/Birney area. The excellent set of aerial photographs which the Bureau of Land Management has for this area may be especially valuable to the archaeologist for this purpose. From my experience in using these aerial photographs, I consider the scale to be too great for them to be of much use in picking out specific sites. However, they are excellent in providing a feeling for the topography, and as part of the methodology for further work I suggest that it may be possible to generate a potential settlement pattern model from the aerial photographs for the hypotheses presented here and then compare correlations based on additional field survey work in the areas for which these models are developed.

The Tongue River country is rich with prehistoric information (Loendorf, Barnett, and Larson 1972:79 -- and this report) and quite probably the Powder River drainage as well. In view of the impending threat of destruction due to an expanding population and concomitant resource demands, much data remains to be salvaged and, perhaps, some to be preserved in place (Loendorf, Barnett, and Larson 1972:81-82). Further archaeological field work in the Decker/Birney area cannot help but add to our growing knowledge and understanding of Montana's prehistory.

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For these organizations, the intern program provides the problem-solving talents of student manpower while making the resources of universities and colleges more available. For institutions of higher education, the program provides relevant field education for their students while building their capacity for problem-solving.

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